

- #977 REDUCING THE NUMBER OF RABBITS IN EYE AND SKIN IRRITANCY TESTS. S C Rodriguez, W E Dalbey, K M Wilkins and C B Cope. Environmental Health Sciences Laboratory, Mobil Oil Corporation, Princeton, NJ.
- #978 EFFECTS OF CAGING DENSITY ON PARAMETERS MEASURED IN RAT TOXICITY STUDIES. R Billington, D F Newton and R J Harling. Huntingdon Research Centre Ltd., Huntingdon, Cambridgeshire, UK.
- #979 USE OF COVARIANCE ANALYSIS FOR UNCOVERING BODY WEIGHT EFFECTS. J H Gillis, J T Stevens and R F Potrepka. CIBA-GEIGY Corporation, Greensboro, NC.
- #980 STRAIN AND SEX DIFFERENCES IN PORPHYRIN EXCRETION RATES IN RATS. C L Luckhurst, H A Davis, M A Bowers and J S Woods. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #981 INFLUENCE OF INTRAVENOUS INFUSION RATES AND SOLUTION PH ON PULMONARY EDEMA IN CONSCIOUS RATS. D J Murphy, M E Joran and C J Kotzer. SmithKline Beecham Pharmaceuticals, Dept. of Investigative Toxicology, King of Prussia, PA.
- #982 CONTINUOUS INTRAVENOUS INFUSION IN FISCHER 344 RATS FOR SIX MONTHS. M J Vodicnik, B L Hawkins, J A Cochran, P A Cross, J O Houchins, E L Russell, W D Johnson, and P C Francis. Toxicology Research Laboratories, Eli Lilly and Co, Greenfield, IN.
- #983 CONTINUOUS INTRAVENOUS INFUSION IN BEAGLE DOGS. R O Oshodi, P McDonald. Inveresk Research International Ltd, Tranent, Scotland, Sponsor: A B Wilson.
- #984 PERITONEAL FLUID EXHANGE IN BEAGLE DOGS USING A LIFECAATH<sup>R</sup> PERITONEAL IMPLANT SYSTEM. P McDonald and R O Oshodi. Inveresk Research International Ltd, Tranent, Scotland. Sponsor: A B Wilson.
- #985 THE HAIRLESS GUINEA PIG AS A POTENTIAL MODEL FOR EVALUATING DERMAL SENSITIZATION BY AIRBORNE MATERIALS. J S Ferguson, N S Hatoum, D R Dutton, and J K Yermakoff. IIT Research Inst. and Amoco Corp, Chicago, IL.
- #986 NOVEL *IN VITRO* SYSTEM FOR THE ASSESSMENT OF TOXICITY OF VOLATILE COMPOUNDS. N J DelRaso, S R Channel, D G Bartholomew, M J Walsh, and J A Kessler. Toxicology Division (OL-AL/OET), Armstrong Laboratory, WPAFB, OH.
- #987 A NEW COMPUTER PROGRAM FOR EVALUATION OF PULMONARY MECHANICS IN MICE. R D Thompson, R Vijayaghavan, Y Alarie, and M Schaper. University of Pittsburgh, Pittsburgh, PA.
- #988 INCORPORATION OF AN ABBREVIATED FUNCTIONAL OBSERVATIONAL BATTERY (FOB) INTO SUBCHRONIC STUDIES IN RATS AND MICE. R E Wilson, S J Hermansky, C A Ferry, M W Gill and J Smith<sup>1</sup>. Bushy Run Research Center/Union Carbide Chemicalsand Plastics Inc., Export, PA. and <sup>1</sup>University of Delaware, Newark, DE.
- #989 MALE REPRODUCTION TOXICITY TESTING: A METHOD FOR THE EVALUATION OF RAT SPERM MOTILITY, MORPHOLOGY AND QUANTITY. P Ridgeway. Toxicol Laboratories Limited, Ledbury, Herefordshire, UK. Sponsor: J H Baillie.
- #990 A METHOD FOR THE ESTIMATION OF DNA AND RNA SYNTHETIC ACTIVITY IN SERTOLI-GERM CELL CO-CULTURES. L M Shih and W W Ku. Developmental and Reproductive Toxicology Group, NTP/NIEHS, Research Triangle Park, NC. Sponsor: R E Chapin.
- #991 ADVANCES IN THE USE OF THE FLUORESCENT PROBE FURA-2 FOR THE ESTIMATION OF INTRASYNAPTOsomAL CALCIUM. S L Yates<sup>1</sup>, E N Fluhler, and P M Lippiello. Duke University Medical Center, Integrated Toxicology Program, Durham, NC and RJR-Nabisco, Pharmacology Division, Winston-Salem, NC. Sponsor: J D deBethizy.
- #992 TRACE LEVEL DETERMINATION OF CLENBUTEROL IN BIOLOGICAL SAMPLES USING ELECTRON CAPTURE DETECTION. C B Spainhour, Jr. Dept. of Veterinary Anatomy & Public Health, College of Veterinary Medicine, Texas A & M University, College Station, TX.
- #993 EXAMINATION OF MITOCHONDRIA EXPOSED TO 1,2-DIMETHYLHYDRAZINE USING ATOMIC FORCE MICROSCOPY AND OTHER TECHNIQUES. C L A Nowlin, S Howells, D Sarid, A J Gandolfi. Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ.
- #994 RAPID FIELD-PRACTICAL DIAGNOSTIC ASSAYS FOR THE DETECTION OF FUMONISIN B<sub>1</sub>, CYCLOPIAZONIC ACID, DEOCYNIVALENOL, AFLATOXIN AND MIXTURES OF THESE MYCOTOXINS. G Y Hwang, B A Clement, Z Huang, K Mayura, and T D Phillips. Department of Veterinary Anatomy and Public Health, Texas A&M University, College Station, TX.
- #995 AFFINITY PURIFICATION OF DIOXIN BINDING PROTEINS FROM LIVER CYTOSOL. Y Tian<sup>1</sup>, S Ke<sup>1</sup>, L Trogen<sup>2</sup>, C Rappe<sup>2</sup>, J D MacMillan<sup>1</sup>, and P C Kahn<sup>1</sup>. <sup>1</sup>Rutgers University, New Brunswick, NJ, and <sup>2</sup>University of Umea, Umea, Sweden. Sponsor: K R Cooper.
- #996 PARTITION COEFFICIENT DETERMINATION FOR NON-VOLATILE AND INTERMEDIATE VOLATILITY CHEMICALS IN BIOLOGICAL TISSUES. G W Jepson<sup>1</sup>, D K Hoover<sup>1</sup>, R K Black<sup>1</sup>, J D McCafferty<sup>1</sup>, D A Mahle<sup>2</sup>, and J M Gearhart<sup>2</sup>. Toxicology Division (OL-AL/OETA)<sup>1</sup>, Armstrong Laboratory; METI<sup>2</sup>, WPAFB, OH. Sponsor: J W Fisher<sup>1</sup>.
- #997 PARTITION COEFFICIENTS OF VOLATILE ORGANIC COMPOUNDS DETERMINED BY LIQUID SCINTILLATION COUNTING. W D Crank. ManTech, RTP, NC. Sponsor: R A Pegram.

- #998 DEVELOPMENT OF HIGHLY SENSITIVE ELISA FOR FLUPHENAZINE IN HORSES. J M Yang, W E Woods, H H Tai, D S Watt and T Tobin. The Graduate Center for Toxicology, Department of Veterinary Science, Department of Chemistry and the School of Pharmacy, University of Kentucky, Lexington, KY.
- #999 ENZYME-LINKED IMMUNOSORBENT ASSAYS FOR s-TRIAZINES AND UREA HERBICIDES IN HUMAN BODY FLUIDS AND ENVIRONMENTAL SAMPLES. P Schneider, M H Goodrow, A D Lucas and B D Hammock. Depts. of Entomology and Environmental Toxicology, Univ. of California, Davis, CA.
- #1000 ELISA DETECTION OF SOLUBLE AND MEMBRANE BOUND SAXITOXIN-INDUCED PROTEIN IN THE CRAB. D S Smith and D D Kitts. Department of Food Science, University of BC, Vancouver, Canada. Sponsor: G D Bellward
- #1001 ENZYME—CATALYZED HYDROLYSIS OF CYANIDE. H Salem and S A Katz. U.S. Army Chemical Research Development and Engineering Center, Aberdeen Proving Ground, MD.
- #1002 AN ENZYME IMMUNOASSAY FOR THE ENVIRONMENTAL MONITORING OF THE HERBICIDE BROMACIL. H K M Bekheit, A D Lucas, F Szurdoki, S Gee, and B D Hammock. Depts. of Entomology and Environmental Toxicology, Univ. of California, Davis, CA.
- #1003 DETERMINATION OF PLASMA NICOTINE AND COTININE IN RATS EXPOSED TO AGED AND DILUTED SIDESTREAM SMOKE, USING AN ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA). K-M Chang, G Gentry, R Davis, M Stiles and C R E Coggins. R.J. Reynolds Tobacco Co., Winston-Salem, NC.
- #1004 THE REACTION KINETICS OF AN ENZYME BOUND TO AN HPLC STATIONARY PHASE. W D McGuinn and J L Way. Texas A & M University, College Station, TX.
- #1005 FLOW CYTOMETRIC QUANTITATION OF CLEARANCE AND MACROPHAGE BURDEN OF INHALED POLYSTYRENE LATEX BEADS IN RODENTS. P H Ayres, W K Shreve and C R E Coggins. R J Reynolds Tobacco Co, Winston-Salem NC.

**WEDNESDAY MORNING, FEBRUARY 26  
CONVENTION CENTER—EXHIBIT HALL**

**POSTER SESSION: CELL PROLIFERATION**

Chairperson: Joanne Zurlo, Johns Hopkins University, Baltimore, MD

Displayed: 8:30 a.m.–11:30 a.m.  
Attended: 8:30 a.m.–10:00 a.m.

- #1006 EFFECT OF IRON-COMPLEXING AGENTS ON CELL PROLIFERATION OF CULTURED HUMAN CELL LINES. B Schadewinkel, G Baretton<sup>1</sup> and C-P Siegers. Institutes of Toxicology and Pathology<sup>1</sup>, Medical University of Luebeck, FRG.
- #1007 RETROSPECTIVE ASSESSMENT OF LIVER CELL PROLIFERATION: COMPARISON OF TWO PROLIFERATION MARKERS, PCNA AND TRITIATED THYMIDINE. D R Dietrich<sup>1,3</sup>, D S Marsman<sup>2</sup>, J A Popp<sup>2</sup>, and J A Swenberg<sup>3</sup>. <sup>1</sup>Institute of Toxicology, ETH-Zuerich, Switzerland; <sup>2</sup>Chemical Industry Institute of Toxicology, Research Triangle Park, NC; and <sup>3</sup>Departments of Environmental Sciences and Engineering and Pathology, University of North Carolina, Chapel Hill, NC.
- #1008 PROLIFERATING CELL NUCLEAR ANTIGEN IMMUNOHISTOCHEMISTRY: AN ENHANCED METHOD FOR ARCHIVAL RODENT TISSUE. A Greenwell, J F Foley, and R R Maronpot. National Toxicology Program, National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #1009 DETECTION OF PROLIFERATING HEPATOCYTES IN RATS: COMPARISON OF <sup>3</sup>H THYMIDINE (<sup>3</sup>H-TDR) VERSUS PROLIFERATING CELL NUCLEAR ANTIGEN (PCNA). J Foley<sup>1</sup>, R Maronpot<sup>1</sup>, B Butterworth<sup>2</sup> and T Goldsworthy<sup>2</sup>. <sup>1</sup>National Institute of Environmental Health Sciences, Research Triangle Park, NC, <sup>2</sup>Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #1010 INDUCTION OF HEPATIC CELL PROLIFERATION BY BENZODIAZEPINES. J Hill<sup>1</sup>, J Mirsalis<sup>1</sup>, P Smith<sup>2</sup>, D Kornbust<sup>2</sup>. <sup>1</sup>SRI International, Menlo Park, CA; and <sup>2</sup>Merck Sharp & Dohme Research Lab, West Point, PA.
- #1011 DOSE EFFECTS OF BROMODEOXYURIDINE (BrdU) ON RODENT HEPATOCYTE PROLIFERATION MEASUREMENTS. T L Goldsworthy, C S Dunn, and J A Popp. Chemical Industry Institute of Toxicology, Research Triangle Park, NC.
- #1012 EFFECT OF CALORIC RESTRICTION ON AFLATOXIN B<sub>1</sub>-INDUCED CELL PROLIFERATION AND DNA SYNTHESIS IN FISCHER 344 RATS. M W Chou, M H Lu, R A Pegram, P Gao, S Cao, W T Allaben and R W Hart. National Center for Toxicological Research, Jefferson, AR.
- #1013 SITE-SPECIFIC CELL PROLIFERATION IN RENAL TUBULAR CELLS BY THE RENAL TUBULAR CARCINOGEN tris (2,3-DIBROMOPROPYL) PHOSPHATE (TRIS). M L Cunningham, M R Elwell, And H B Matthews. NIEHS, RTP, NC.
- #1014 AGE-RELATED CHANGES IN CELL PROLIFERATION IN RAT LIVER AND KIDNEY. J. Nakamura<sup>1</sup>, D R Dietrich<sup>1,2</sup>, J A Swenberg<sup>1</sup>. <sup>1</sup>Departments of Environmental Sciences and Pathology, University of North Carolina, Chapel Hill, NC, and <sup>2</sup>Inst. of Toxicology, ETH-Zuerich, Switzerland.
- #1015 REGULATION OF  $\alpha$ -AMYLASE SECRETION BY HUMAN PAROTID GLAND EPITHELIAL CELL CULTURES. I C Xue-Hu and D P Chopra. Institute of Chemical Toxicology, Wayne State University, Detroit, MI. Sponsor: R F Novak.

2025807114

- #1016 EFFECTS OF PHORBOL 12-MYRISTATE 13-ACETATE (PMA) ON PHOSPHOLIPID METABOLISM IN AORTIC SMOOTH MUSCLE CELLS (SMCs) OF VARYING PROLIFERATIVE POTENTIAL. R C Bowes, X Ou, and K S Ramos. Dept. of Vet. Physiol. Pharmacol., Texas A&M University, College Station, TX.
- #1017 ASSOCIATION OF ENHANCED CELL PROLIFERATION AND NASAL CANCER IN RATS EXPOSED TO FORMALDEHYDE. T M Monticello, F J Miller, J A Swenberg, T B Starr, J E Gibson, K T Morgan. CIIT, RTP, NC.
- #1018 EFFECT OF ALACHLOR ON CELL PROLIFERATION IN RODENTS. D W Brewster, K J Hotz, W E Ribelin, and A G E Wilson. Environmental Health Laboratory, Monsanto Co., St. Louis, MO.
- #1019 THE S-PHASE RESPONSE OF THE RAT STOMACH FOLLOWING TWO WEEKS OF GAVAGE DOSING WITH ETHYL ACRYLATE. D M Gillette<sup>1</sup>, and C B Frederick<sup>2</sup>. Univ of PA School of Veterinary Medicine<sup>1</sup> and Rohm and Haas Co.<sup>2</sup>, Philadelphia, PA.
- #1020 COLONIC EPITHELIAL CELL PROLIFERATION IN A RAT MODEL OF CARCINOGENESIS INDUCED BY A NONGENOTOXIN. D K Wilcox and T A Bertram. Human Safety Dept., The Procter & Gamble Co., Cincinnati, OH. Sponsor: L Lehman-McKeeman.
- #1021 SODIUM CHLORIDE-INDUCED CELLULAR PROLIFERATION IN RAT STOMACH. D A McMillian, T A Bertram, V R Markiewicz, S V Machotka and M A Cifone. The Procter & Gamble Company, Cincinnati, OH and Hazleton Washington, Vienna, VA.
- #1022 SUSTAINABILITY OF ETHYL ACRYLATE (EA) INDUCED FORESTOMACH (FS) CELL PROLIFERATION (CP) FOR 12, BUT NOT 6 MONTHS, LEADS TO CARCINOGENESIS AFTER CESSION OF DOSING IN MALE F344 RATS. B I Ghanayem, I M Sanchez, and M R Elwell. NIEHS, RTP, NC.
- #1023 SODIUM ORTHOVANADATE (Na<sub>2</sub>VO<sub>4</sub>) STIMULATES 3T3L1 CELL GROWTH AND c-fos GENE EXPRESSION SYNERGISTICALLY WITH INSULIN AND OTHER GROWTH FACTORS. Y W Chen and T M Chan. Department of Molecular Pharmacology and Toxicology, School of Pharmacy, University of Southern California, Los Angeles, CA. Sponsor: P Hochstein.
- #1024 MODULATION OF CCL<sub>4</sub>-INDUCED HEPATOTOXICITY BY MITOGEN EXPOSURE. E J Calabrese, L A Baldwin, and D A Leonard. Environmental Health Sciences Program, University of Massachusetts, Amherst, MA.
- #1025 RELATIONSHIP OF BILE DUCT OBSTRUCTION TO BILIARY EPITHELIAL CELL PROLIFERATION AND HYPERPLASIA FOLLOWING  $\alpha$ -NAPHTHYSOTHIOCYANATE (ANIT) TREATMENT. P C Meunier, D C Kossor, R S Sozio and R S Goldstein. SmithKline Beecham Pharmaceuticals, Depts. Exper. Pathol. and Invest. Tox., King of Prussia, PA.
- #1026 SULFUR MUSTARD-INDUCED ALTERATIONS OF DNA STRUCTURE AND CELL CYCLE KINETICS IN PROLIFERATING HUMAN CELLS IN CULTURE. W J Smith, K M Sanders, J E Caulfield, and C L Gross. US Army Medical Research Institute of Chemical Defense, Aberdeen Proving Ground, MD. Sponsor: T-M Shih.
- #1027 EFFECT OF PEROXISOME PROLIFERATORS ON S-PHASE SYNTHESIS IN PRIMARY CULTURES OF FISH HEPATOCYTES. L A Baldwin, P T Kostecki, and E J Calabrese. Environmental Health Sciences Program, University of Massachusetts, Amherst, MA.

**WEDNESDAY MORNING, FEBRUARY 26  
CONVENTION CENTER—EXHIBIT HALL**

**POSTER SESSION: NEUROTOXICOLOGY I**

Chairperson: Stephen M. Lasley, Illinois University College of Medicine, Peoria, IL

Displayed: 8:30 a.m.–11:30 a.m.

Attended: 10:00 a.m.–11:30 a.m.

- #1028 MICROWAVE-INDUCED HYPERHERMIA DISRUPTS WORKING MEMORY. G A Mickley and B Cobb. Radiofrequency Radiation Branch (OEDR), Directed Energy Division, Armstrong Laboratory, Brooks AFB, TX.
- #1029 THE EFFECT OF METHYL BROMIDE ON MEASURES OF OLFACTORY FUNCTION. J E Evans, and L Hastings. Department of Environmental Health, University of Cincinnati, Cincinnati, OH. Sponsor: E J O'Flaherty.
- #1030 NEUROBEHAVIORAL ASSESSMENT OF FPL 14294KE, A CCK-8 AGONIST WITH ANORECTIC ACTIVITY, IN SPRAGUE-DAWLEY RATS. A J Jacobs, and S B Rawleigh. Fisons Pharmaceuticals, Divisional Research and Development, Rochester, NY.
- #1031 A RETROSPECTIVE AND CROSS-SECTIONAL EVALUATION OF CENTRAL NERVOUS SYSTEM (CNS) SYMPTOMS IN AN ALUMINUM PRIMARY SMELTER. D Echeverria, J S Woods, J P Holland, and A B Graves. Battelle Seattle Research Center, Seattle, WA.
- #1032 THE EFFECTS OF P-AMINOPROPIONEPHENONE (PAPP) AND P-AMINOOCTOYLPHENONE (PAOP) AGAINST SODIUM CYANIDE (CN) CHALLENGE AND ON RIGHTING AND MOTOR ACTIVITY IN MICE. G A Rockwood, J A Romano, B A Scharf, and S I Baskin. United States Army Medical Research Institute of Chemical Defense, Drug Assessment and Pharmacology Divisions, Aberdeen Proving Ground, MD.
- #1033 A CLINICAL AND NEUROPSYCHOLOGIC REVIEW OF 9 NEUROLOGIC CLAIMANTS PREVIOUSLY EXPOSED ON AN ALUMINUM POTLINE. J P Holland, D Echeverria, J S Woods, and A B Graves. Battelle Seattle Research Center, Seattle, WA.

- #1034 EFFECTS OF SUFENTANIL AND NALMEFENE ON AUDITORY BRAINSTEM RESPONSES IN THE FERRET. S Reutter and R Mioduszewski. US Army Chemical Research, Development and Engineering Center, APG, MD. Sponsor: *H Salem*
- #1035 PERSISTING EFFECTS OF CHRONIC NICOTINE EXPOSURE ON RADIAL-ARM MAZE PERFORMANCE. E D Levin and J E Rose. Nicotine Research Laboratory, VA Medical Center and Dept of Psychiatry, Duke University, Durham, NC.
- #1036 SCOPOLAMINE IMPAIRS LEARNING PERFORMANCE IN THE M-WATER MAZE IN RATS. M A McCartney, P L Scinto, C A Lamia, J J Mitala, S Altan, D S Barrett. The R W Johnson Pharmaceutical Research Institute, Raritan, NJ. Sponsor: *W J Powers*.
- #1037 EFFECTS OF CAFFEINE ON IONIZING RADIATION-INDUCED LOCOMOTOR DECREMENT IN MICE. M R Landauer, M D Blair, M E Faccioli, S L Baxter, and J B Hogan. Department of Behavioral Sciences, Armed Forces Radiobiology Research Institute, Bethesda, MD. Sponsor: *V Bogo*.
- #1038 AN ASSESSMENT OF REPRODUCTIVE AND DEVELOPMENTAL EFFECTS OF CAFFEINE IN ANIMALS. S G Gilbert. Department of Environmental Health, University of Washington, Seattle, WA.
- #1039 TWO WEEK DRUG INTERACTION STUDY WITH SND-919, ELDEPRYL® AND SINEMET® IN RHESUS MONKEYS. A L Kiorpis, S A Paulsen. Hazleton Wisconsin, Inc., Madison, WI; D J Ball, S B Montgomery. Boehringer Ingelheim Pharmaceuticals Inc, Ridgefield, CT.
- #1040 COMPARISON OF SERUM CHEMISTRY PARAMETERS IN MALE RHESUS MONKEYS UNDER THREE RESTRAINT METHODS. B Billhymer, R C Couch and D C Stauffer. White Sands Research Center, Alamogordon, NM.
- #1041 EVALUATION OF DIAZEPAM AS AN ANTICONVULSANT IN GD-INTOXICATED MONKEYS. R G Menton, C T Olson, R C Kiser, M C Matthews, G S Dill. Battelle Memorial Institute, Columbus, OH.
- #1042 ACUTE BEHAVIORAL TOXICITY OF MK-801 IN RHESUS MONKEYS: EFFECTS ON PERFORMANCE IN AN OPERANT TEST BATTERY (OTB). M G Paule, E A Buffalo, M P Gilliam, and R A Allen. Developmental Toxicology, National Center for Toxicological Research, Jefferson, AR.
- #1043 MK-801 ENHANCES BRAIN-STIMULATION REWARD AND IMPAIRS SERIAL PATTERN LEARNING IN RATS. B S Toner, J D Rowan, and S B Fountain. Department of Psychology, Kent State University, Kent, OH. Sponsor: *Z Annau*.
- #1044 TOXICOLOGY OF D7569, A PREDICTED ANXIOLYTIC AGENT, IN MALE BEAGLE DOGS. L E Geiger, P C Mann, L J Ziembka, B A Flynn, M D Odorisio, N H Lee, and K L Neilson. ICI Pharmaceuticals Group, ICI Americas Inc., Wilmington, DE.
- #1045 TOXICITY OF A POTENTIAL ANXIOLYTIC DRUG IN BEAGLE DOGS. R A Saatman, M G Valerio, L J Ziembka, B A Flynn, M D Odorisio, N H Lee, K L Neilson. ICI Pharmaceuticals Group, ICI Americas Inc., Wilmington, DE.
- #1046 EFFECTS OF FOUR PESTICIDES ON THE STARTLE RESPONSE IN HARLAN SPRAGUE DAWLEY® ADULT RATS. E Chow, J C Pettersen, and C L Leahy. Environmental Health Center, Agricultural Div., CIBA-GEIGY Corp. Farmington, CT.
- #1047 SYSTEMIC AND NEUROTOXIC EFFECTS OF ACUTE AND REPEATED PHENOL ADMINISTRATION. M P Schlicht<sup>1</sup>, V C Moser<sup>1</sup>, B M Sumrell<sup>2</sup>, E Berman<sup>2</sup>, and R C MacPhail<sup>2</sup>. <sup>1</sup>ManTech Environmental Technology and <sup>2</sup>US EPA, RTP, NC.
- #1048 REDUCED VISUAL CONTRAST SENSITIVITY IN RATS AFTER ACUTE EXPOSURE TO CARBON DISULFIDE (CS<sub>2</sub>). W K Boyes, M S Bergegay, and D W Herr. Neurotoxicology Division, USEPA, RTP, NC.
- #1049 CHEMICAL KINDLING WITH LINDANE IN THE RAT. M E Gilbert. ManTech Technology Services Corp., RTP, NC. Sponsor: *H A Tilson*.
- #1050 NEUROTOXICOLOGIC EXAMINATION OF RATS EXPOSED TO 1,1,1-TRICHLOROETHANE VAPOR FOR 13 WEEKS. J L Mattsson, R R Albee, L G Lomax, M J Beekman, and P J Spencer. Health and Environmental Sciences, Dow Chemical Co., Midland, MI.
- #1051 FREQUENCY-DEPENDENT OTOTOXICITY FOLLOWING INHALATION EXPOSURE TO TRICHLOROETHYLENE IN THE RAT. K M Crofton and X Zhao. Neurotoxicology Division, USEPA, and ManTech Technology Services Corp, RTP, NC.
- #1052 THE BEHAVIORAL EFFECTS OF INHALED TOLUENE IN COMBINATION WITH 1,1,1-TRICHLOROETHANE OR ETHANOL. E B Evans and R L Balster, Dept. of Pharmacology and Toxicology, Medical College of Virginia, Richmond, VA. Sponsor: *J F Borzelleca*.
- #1053 NEUROBEHAVIORAL TOXICITY OF INGESTED PERCHLOROETHYLENE IN RATS. D A Warren, C E Dallas, T G Reigle, and S Muralidhara. Dept. of Pharmacology and Toxicology, College of Pharmacy, University of Georgia, Athens, GA.
- #1054 A NEUROBEHAVIORAL EVALUATION OF PERCHLOROETHYLENE EXPOSURE IN PATIENTS AND DRY CLEANERS: A POSSIBLE RELATIONSHIP BETWEEN CLINICAL AND PRE-CLINICAL EFFECTS. R White and D Echeverria. Battelle Seattle Research Center, Seattle, WA. Sponsor: *J S Woods*
- #1055 ACUTE AND PERSISTENT NEUROTOXIC EFFECTS OF PERCHLOROETHYLENE IN THE RAT. B M Kulig, J H C M Lammers and R M A Jaspers. Department of Neurotoxicology, Medical Biological Laboratory TNO, Rijswijk, The Netherlands.

- #1056 ALTERATIONS IN FLASH EVOKED POTENTIALS PRODUCED BY 1,3-DICHLOROPROPANE: FURTHER EVIDENCE THAT LIPID SOLUBILITY ALONE DOES NOT PREDICT NEUROACTIVE POTENCY. *D W Herr, M S Bergegay and W K Boyer.* NTD, US EPA, Res. Tri, Pk., NC.
- #1057 ISOPROPANOL 14-WEEK VAPOR INHALATION STUDY IN RATS AND MICE WITH NEUROTOXICITY EVALUATION IN RATS. *H D Burleigh-Flayer<sup>1</sup>, M W Gill<sup>1</sup>, D J Marino<sup>2</sup>, L W Masten<sup>3</sup>, R H McKee<sup>4</sup>, T R Tyler<sup>1</sup>, and T Gardiner<sup>5</sup>.* <sup>1</sup>Bushy Run Research Center/Union Carbide Chemicals and Plastics Company Inc., Export, PA; <sup>2</sup>BP America Inc., Cleveland, OH; <sup>3</sup>ARCO Chemical Company, Newton Square, PA; <sup>4</sup>Exxon Biomedical Sciences, Inc., East Millstone, NJ; and <sup>5</sup>Shell Oil Company, Houston, TX.
- #1058 METHANOL VAPOR AT A TRAFFIC SCENARIO LEVEL AFFECTS HUMAN NEUROBEHAVIORAL MEASURES. *M R Cook, C Graham, H Cohen, M Gerkovich, F Bergman, R Harris, L Siemann.* Midwest Research Institute, Kansas City, MO. Sponsor: *V Reddy*:
- #1059 THE EFFECTS OF ACUTE SUB-LETHAL DOSES OF METHANOL ON A SCHEDULE CONTROLLED BEHAVIOR IN RATS. *A F Youssef, B Weiss, and C Cox.* Dept. of Forensic Medicine Toxicology, Cairo University, Egypt and Environmental Health Sciences Center, Univ. of Rochester, Rochester, NY.
- #1060 DEVELOPMENTAL NEUROTOXICITY EVALUATION OF ISOPROPANOL. *H K Bates<sup>1</sup>, R H McKee<sup>2</sup>, G S Bieler<sup>1</sup>, T H Gardner<sup>3</sup>, M W Gill<sup>4</sup>, D J Marino<sup>5</sup>, and L W Masten<sup>6</sup>.* <sup>1</sup>Research Triangle Institute, RTP, NC; <sup>2</sup>Exxon Biomedical Sciences, East Millstone, NJ; <sup>3</sup>Shell Oil Co., Houston, TX; <sup>4</sup>Union Carbide Corp, Export, PA; <sup>5</sup>BP America, Cleveland, OH; <sup>6</sup>ARCO Chemical Co, Newton Square, PA.
- #1061 A SUBCHRONIC NEUROTOXICITY STUDY OF A GASOLINE ADDITIVE SOLVENT VAPOR CONTAINING TOLUENE, SUBSTITUTED BENZENES AND 2-ETHYL-1-HEXANOL IN SPRAGUE-DAWLEY RATS. *J S Duffy<sup>1</sup>, R J Papciak<sup>2</sup>, C J Hardy<sup>3</sup> and D W Coombs<sup>3</sup>.* <sup>1</sup>Texaco Inc., Beacon, NY; <sup>2</sup>Texaco Chemical Company, Houston, TX; Huntingdon Research Centre Ltd., Huntingdon, Cambridgeshire, England. Sponsor: *E S Lapadula*.

**WEDNESDAY MORNING, FEBRUARY 26  
CONVENTION CENTER—EXHIBIT HALL**

### **POSTER SESSION: PERIPHERAL NERVOUS SYSTEM**

**Chairperson:** Herbert E. Lowndes, Rutgers University, Pharmacology and Toxicology, Piscataway, NJ

**Displayed:** 8:30 a.m.–11:30 a.m.  
**Attended:** 8:30 a.m.–10:00 a.m.

- #1062 METABOLISM OF 3,3-IMINODIPROPIONITRILE AND DEUTERIUM SUBSTITUTED ANALOGS: IMPLICATIONS FOR POTENTIAL ACTIVATION SITES. *R H Denlinger, D C Anthony, K Amarnath, V Amarnath, and D G Graham.* Duke University Medical Center, Durham, NC and The Upjohn Company, Kalamazoo, MI.
- #1063 COMPARISON OF  $Ca^{2+}$ /CALMODULIN-DEPENDENT PROTEIN KINASE II PURIFIED FROM CONTROL AND DIISOPROPYLPHOSPHOROFLUORIDATE (DFP)-TREATED ADULT HENS. *R P Gupta, D M Lapadula and M B Abou-Donia.* Duke University Medical Center, Durham, NC.
- #1064 ENHANCED CALMODULIN BINDING AND INCREASED CALCIUM/CALMODULIN DEPENDENT PROTEIN KINASE II PHOSPHORYLATION FOLLOWING A SINGLE SUBCUTANEOUS NEUROTOXIC DOSE OF DFP. *J Knoth-Anderson, M E Viana, and M B Abou-Donia.* Duke Univ. Med. Ctr., Durham, NC.
- #1065 [ $^3$ H]DIISOPROPYLPHOSPHOROFLUORIDATE (DFP) BINDING TO CYTOSKELETAL PROTEINS OF HEN BRAIN AND SPINAL CORD *IN VITRO*. *K R Wilmarth and M B Abou-Donia.* Duke University Medical Center, Durham, NC.
- #1066 ACRYLAMIDE AND GAMMA-DIKETONE EFFECTS ON MITOSIS AND THE MITOTIC SPINDLE. *M A Friedman, D W Sickles.* American Cyanamid Co., Wayne, NJ and Dept. of Cellular Biology and Anatomy, MCG, Augusta, GA.
- #1067 PHARMACOKINETICS (PK) AND BIOAVAILABILITY (BA) OF RECOMBINANT HUMAN NERVE GROWTH FACTOR (rhNGF) IN THE MOUSE AND MONKEY. *S A Baughman, M B Schoenhoff, S A Chen, A Rescigno, J D Green, and J Mordenti.* Department of Safety Evaluation, Genentech Inc., S. San Francisco, CA.
- #1068 DISRUPTION OF ENERGY METABOLISM AND NEURONAL DEGENERATION BY 3-NITROPROPIONIC ACID. *M I Sabri, A C Ludolph, P Novitt, and P S Spencer.* Center for Research on Occupational and Environmental Toxicology, Oregon Health Sciences University, Portland, OR.
- #1069 EVALUATION OF THE ACUTE DELAYED NEUROTOXICITY OF DURAD® 220B TRIARYL PHOSPHATE IN THE DOMESTIC HEN. *L A Kotkoskie, C Freeman, W Loeb<sup>1</sup>, R F McConnell and M L Weiner.* FMC Corporation, Princeton, NJ; <sup>1</sup>AniLytics Inc., Gaithersburg, MD.
- #1070 ACRYLAMIDE ALTERS PROXIMODISTAL ELEMENTAL DISTRIBUTION OF RAT PERIPHERAL NERVE AXONS. *R M LoPachin, C M Castiglia and A J Saubermann.* Department of Anesthesiology, SUNY Stony Brook, Stony Brook, NY.
- #1071 POTENTIATION OF ORGANOPHOSPHATE NEUROPATHY: PRELIMINARY HISTOPATHOLOGY AND DEMONSTRATION OF CLINICAL POTENTIATION BY AN ORGANOPHOSPHINATE. *R J Richardson, B L Yano, U S Kayyali, and J C Randall.* Toxicology Program, The University of Michigan, Ann Arbor, MI, and <sup>1</sup>Toxicology Research Laboratory, The Dow Chemical Company, Midland, MI.

2025807117

- #1072 NEURONAL LOSS IN DORSAL ROOT GANGLION FOLLOWING 3-ACETYL PYRIDINE. A L Valle, C M Beiswanger, H E Lowndes, and K R Reuhl. Neurotoxicology Laboratories, Rutgers University College of Pharmacy and JGPT, Piscataway, NJ.
- #1073 ACUTE 3-ACETYL PYRIDINE CAUSES SMALL FIBER NEUROPATHY. C M Beiswanger, D Zhou, K R Reuhl, and H E Lowndes. Neurotoxicology Laboratories, Rutgers Univ. College of Pharmacy, and EOSHI, Piscataway, NJ.
- #1074 EFFECTS OF METHYLMERCURY (MeHg) ON  $\text{Na}^+$  AND  $\text{Ca}^{2+}$  CHANNELS AT INTACT SOMATIC MOTOR NERVE TERMINALS. T J Shafer and W D Atchison. Dept. Pharmacol. and Toxicol. and Inst. for Env. Toxicol., Michigan State University, E. Lansing, MI.
- #1075 REFRACTORINESS TO THE NEUROMUSCULAR TOXICITY OF DITHIOBIURET IN RATS. K D Williams, A Z Elliott, R E Peterson, and W D Atchison. Hazleton Wisconsin and the University of Wisconsin, Madison, WI; Michigan State University, E. Lansing, MI.
- #1076 COMPARISON OF TOXICITIES OF ACRYLAMIDE (ACR) AND 2,5-HEXANEDIONE (HD) IN HENS AND RATS ON 3-WEEK DOSING REGIMENS. B S Jortner and M Ehrich. Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA.
- #1077 PRECLINICAL SAFETY EVALUATION OF RECOMBINANT HUMAN NERVE GROWTH FACTOR (rhNGF). B C Rogers, L Dickrell, C P Chow, G C McCormick, T G Terrell and J D Green. Department of Safety Evaluation, Genentech Inc., S. San Francisco, CA and Hazleton, Inc., Madison, WI.

**WEDNESDAY MORNING, FEBRUARY 26**  
**CONVENTION CENTER—EXHIBIT HALL**

### **POSTER SESSION: HEMATOPOIETIC/PHAGOCYTIC CELLS**

**Chairpersons:** Albert E. Munson, Medical College of Virginia, Richmond, VA and Scott E. Loveless, Haskell Laboratory, Newark, DE

Displayed: 8:30 a.m.–11:30 a.m.

Attended: 10:00 a.m.–11:30 a.m.

- #1078 HEMATOLOGIC CHANGES IN THE RAT FOLLOWING TREATMENT WITH A HYPOLIPIDEMIC AGENT. T Sellers, D Meyer, M Gunning, K Lynch, S Mabray, L Macartney and W Kerns. Dept of Experimental Pathology, SmithKline Beecham Pharmaceuticals, King of Prussia, PA. Sponsor: R Goldstein.
- #1079 EFFECTS OF 2-BUTOXYETHANOL (BE) AND ITS TOXIC METABOLITE 2-BUTOXYACETIC ACID (BAA) ON BLOOD FROM VARIOUS MAMMALS *IN VIVO* AND *IN VITRO*. S Ward, C Wall, and B I Ghanyem. NIH/NIEHS, RTP, NC.
- #1080 FAVISM: DIVICINE HEMOTOXICITY. D C McMillan and D J Jollow. Dept. of Pharmacology, MUSC, Charleston, SC.
- #1081 INVESTIGATION OF POTENTIAL FOR THROMBOCYTOPENIA INDUCED BY MAGNEVIST OR GADODIAMIDE INJECTION (OMNISCAN). B A Mayes, R M Everett, K A Gossett and E P Harling. Sterling Research Group, Rensselaer, NY.
- #1082 ALTERATION OF CELLULAR GLUTATHIONE AS A FACTOR IN HYDROQUINONE-INDUCED CYTOTOXICITY TO PRIMARY CULTURED BONE MARROW STROMAL CELLS OF DBA/2 MICE. Y Li and M A Trush. Division of Toxicological Sciences, School of Hygiene and Public Health. The Johns Hopkins University, Baltimore, MD.
- #1083 THE INFLUENCE OF DOSING REGIMEN ON SYSTEMIC TOXICOLOGY OF 3, DEOXY 3, FLUOROTHYMIDINE (FLT) IN LABORATORY ANIMALS. E Burden, R Lewis, D E Johnson, R Schroer. American Cyanamid Company, Medical Research Division, Pearl River, NY.
- #1084 PRECLINICAL SAFETY EVALUATION OF N-[4-(4-FLOUROPHENYL) SULFONYL] PHENYL ACETAMIDE (CL 259,763). W J Dougherty, R A Schroer, C Traitor, L Boroje. American Cyanamid Co., Medical Research Divison, Pearl River, NY. Sponsor: D Novicki
- #1085 A POSSIBLE MECHANISM OF HEINZ BODY HEMOLYTIC ANEMIA INDUCED BY DQ-2511 IN DOGS. H Ohno, H Tojo, M Nomura, and S Takayama. Daiichi Pharmaceutical Co., Ltd. Tokyo, Japan.
- #1086 CHARACTERIZATION OF AN *IN VITRO* MODEL FOR ASSESSING MITOCHONDRIAL MATURATION IN MONOCYTIC CELLS. S J Rembush, R W Craig and M A Trush. Johns Hopkins Medical Institutions, Baltimore, MD.
- #1087 *IN VIVO* AND *IN VITRO* METABOLIC AND ELECTRON SPIN RESONANCE (ESR) SPECTRAL CHANGES DURING ANILINE-INDUCED HEMATOXICITY IN RATS. M M Iba<sup>1</sup>, A Storch<sup>1</sup>, C F Schafer<sup>2</sup>, P Downs<sup>2</sup>, W Massion<sup>2</sup>, and J L Poyer<sup>3</sup>. Rutgers Univ., Piscataway, NJ<sup>1</sup>, Univ. of Oklahoma Med. Ctr.<sup>2</sup>, and Oklahoma Med. Res. Foundn.<sup>3</sup>, Oklahoma City, OK.
- #1088 CHEMOTACTIC POTENCY OF BRONCHOALVEOLAR LAVAGE (BAL) FLUID AFTER ACUTE  $\text{O}_3$  EXPOSURE IN MICE. S Hirano, NIES, Tsukuba; Japan/Duke Univ., NC and G E Hatch. HERL, US-EPA, Durham, NC.
- #1089 EFFECT OF RICIN ON MITOCHONDRIAL FUNCTION IN ALVEOLAR MACROPHAGES. J E Swauger, J G Pace, P J Glass, S J Rembush, and M A Trush. US Army Medical Research Inst. of Infectious Diseases, Frederick, MD and Johns Hopkins Univ., Baltimore, MD.
- #1090 A COMPARISON OF THE PULMONARY DEFENSES AGAINST STREPTOCOCCAL INFECTION IN RATS AND MICE FOLLOWING  $\text{O}_3$  EXPOSURE. M J Gilmour\*, P Park, and M J K Selgrade. \*Center for Environmental Medicine, UNC/Chapel Hill. HERL/US EPA, Research Triangle Park, NC.

- #1091 ACID AEROSOL EXPOSURE ALTERS INTRACELLULAR PH OF ALVEOLAR MACROPHAGE. L C Chen, Q S Qu, T Gordon, M O Amdur and J M Fine\*. Institute of Environmental Medicine, New York University Medical Center, Tuxedo, NY; \*Norwalk Hospital, Norwalk, CT.
- #1092 ATTENUATION OF BLEOMYCIN-INDUCED SEQUESTRATION OF NEUTROPHILS IN HAMSTER LUNGS BY DERMAL APPLICATION OF NITROGLYCERIN. S N Giri, Q Wang, D R Haynam, D M Hyde, and A B Combs. Depts. of Vet. Pharmacol. and Toxicol. and Anatomy, Univ. of Calif., Davis, CA, and Div. Pharmacol., Univ. of Texas, Austin, TX.
- #1093 EFFECT OF OZONE EXPOSURE ON SURFACTANT ASSOCIATED PROTEIN A (SP-A) CONTENT IN THE RESPIRATORY TRACT OF GUINEA PIGS. W-Y Su, T Gordon, I Finkelstein, and M Amdur. Institute of Environ. Medicine, NYC Medical Center, Tuxedo, NY.
- #1094 COMPARATIVE TOXICOLOGY OF SULFURIC ACID AEROSOLS. M Amdur, T Gordon, and L C Chen. Institute of Environmental Medicine, NYC Medical Center, Tuxedo, NY.
- #1095 ACTIVATED NEUTROPHILS FROM RAT INJURE ISOLATED HEPATOCYTES. S VanCise, M B Bailie, R A Roth, and P E Ganey. Depts. of Pharmacology, Toxicology and Med., and Inst. for Environmental Toxicology, Michigan State University, East Lansing, MI..
- #1096 KUPFFER CELL PHAGOCYTOSIS IN ISOLATED, PERFUSED LIVERS FROM IRON-TREATED GUINEA PIGS. P E Ganey, W Lane, K A Schwartz, and M Wilson. Depts. of Med. and Pharmacol. and Toxicol., Michigan State University, East Lansing, MI.

**WEDNESDAY, FEBRUARY 26**

**12:00 NOON-1:00 P.M.**

**CONVENTION CENTER-BALLROOM 6C**

## **RESPONSES OF THE BRAIN TO TOXIC INSULT: MOLECULES, MODELS, AND MEDICINE**

### **1992 Burroughs Wellcome Toxicology Scholar Award Lecture**

**by Richard P. Mailman, School of Medicine, University of North Carolina, Chapel Hill, NC**

**Chaired by Meryl H. Karol, Ph.D.**

Dopamine neurons, often a site of insult by chemicals, also are important in the etiology and therapy of numerous neurological and psychiatric disorders. Yet much remains to be known about how the nervous system responds to destruction of dopamine neurons. To compensate for loss of released neurotransmitter, it is assumed that target cells increase synthesis of receptors, thus amplifying residual signals. While such "receptor up-regulation" has been believed to be the principal way of adapting to severe insult in the mature nervous system, our recent work has suggested that this mechanism often may be an epiphenomenon. Rather, factors such as the interaction of different classes of dopamine receptors, and the cytoarchitecture of the neurons on which these dopamine receptors are located, may be more important. Experiments aimed at these questions led to the hypothesis that restoration of normal function after severe insult (e.g., Parkinson's disease or MPTP-intoxication) requires activation of the D<sub>1</sub> class of dopamine receptors. This hypothesis would explain the lack of effectiveness of D<sub>2</sub> dopamine agonists in severe parkinsonism. In addition, it suggested that the negative clinical trials with available D<sub>1</sub> agonists was due to these drugs being only partial agonists. Studying the mechanisms of ligand interaction with D<sub>1</sub> receptors soon led to the synthesis of dihydrexidine, the first full efficacy, high potency bioavailable D<sub>1</sub> agonist. Use of dihydrexidine in these models has provided dramatic evidence of the importance of D<sub>1</sub> receptors in maintaining normal motor function of the primate basal ganglia, and also has provided new information about the sequelae of severe intoxication.

**WEDNESDAY AFTERNOON, FEBRUARY 26**

**1:30 p.m.-4:30 p.m.**

**CONVENTION CENTER—BALLROOM 6A**

## **SYMPOSIUM: ADVANCES IN BIOLOGICALLY-BASED MODELS FOR RESPIRATORY TRACT UPTAKE OF INHALED VAPORS**

**Sponsored by the Inhalation and Risk Assessment Specialty Sections**

**Chairperson: Michele A. Medinsky, CIIT, Research Triangle Park, NC**

Physiologically-based pharmacokinetic models for volatile organic chemicals typically describe the respiratory tract as a single compartment in which chemical in the alveolar air space and the arterial blood are in instantaneous equilibrium. These models also assume that distribution of chemical in the airstream throughout the respiratory tract is uniform and that uptake is only significant in the alveolar region. A functional role for the upper respiratory tract in the uptake of volatile chemicals has been largely ignored. While these models have worked well for chemicals with low aqueous solubility in biological fluids, systemic uptake of highly soluble volatiles is overestimated. Thus, there is a significant effort to describe the critical determinants for uptake of soluble chemicals and to formulate more biologically relevant descriptions of the respiratory tract. Investigators have addressed this problem from several viewpoints. Airflow patterns in the respiratory tract, regional metabolism, diffusion-dependent uptake, and the cyclic nature of respiration are now being incorporated into the current models. Use of dosimetric models which incorporate relevant biology for inhaled chemicals will ultimately result in more rational risk assessments.

- #1097 1:30 ADVANCES IN BIOLOGICALLY-BASED MODELS FOR RESPIRATORY TRACT UPTAKE OF INHALED VAPORS: INTRODUCTION. M A Medinsky. CIIT, Research Triangle Park, NC.
- #1098 1:40 MODELS OF AIRFLOW AND REGIONAL GAS UPTAKE IN THE RESPIRATORY TRACT. J S Kimbell, M E Anderson, and K T Morgan. CIIT, Research Triangle Park, NC.
- #1099 2:20 NASAL FIRST-PASS METABOLISM AND ABSORPTION OF ORGANIC VAPORS. J B Morris. Toxicology Program, University of Connecticut, Storrs, CT.

#1100 3:10 RESPIRATORY TRACT UPTAKE OF INHALED VAPORS DURING CYCLIC BREATHING. P Gerde<sup>1</sup> and A R Dahl<sup>2</sup>. <sup>1</sup>National Institute of Occupational Health, Solna, Sweden; <sup>2</sup>Inhalation Toxicology Research Institute.

#1101 3:50 THE INFLUENCE OF THE RESPIRATORY TRACT ON THE UPTAKE OF INHALED COMPOUNDS AND ON THEIR DELIVERY TO SYSTEMIC BLOOD. J H Overton. US EPA, Research Triangle Park, NC.

**WEDNESDAY AFTERNOON, FEBRUARY 26**

1:30 p.m.-4:30 p.m.

CONVENTION CENTER—BALLROOM 6C

**SYMPOSIUM: MOLECULAR RESPONSES TO ENVIRONMENTAL MODIFICATION OF CRITICAL GENES**

**Chairperson:** George E. Milo, The Ohio State University Comprehensive Cancer Center and Department of Medical Biochemistry, Columbus, OH

The mammalian and human cell is a diverse factory that is dynamically carrying on functions that contribute to the pleiotropic responses of daily insults. Insofar as these cells exhibit specific recognized responses to these daily insults, such as DNA-adduction, protein-adduction, DNA repair, altered gene function, growth arrest, cell killing, transformation and mutagenesis, the underlying mechanisms of response to these insults and the cascades that occur that lead to an altered biological response, will be discussed. An attempt to deal with specific underlying molecular genetic mechanisms and the consequences of the alteration of critical genes will be discussed. An attempt will be made to correlate early changes in DNA- or protein-adduction with late changes in gene function.

#1102 1:30 MOLECULAR RESPONSES TO ENVIRONMENTAL MODIFICATION OF CRITICAL GENES: INTRODUCTION. G E Milo. The Ohio State University Comprehensive Cancer Center and Department of Medical Biochemistry, Columbus, OH.

#1103 1:40 RESPONSES OF THE [Ah] GENE BATTERY TO ENVIRONMENTAL ADVERSITY: POLYCYCLIC AROMATIC COMPOUNDS AND OXIDATIVE STRESS. D W Nebert, H-C Liang, and H G Shertzer. Department of Environmental Health, Univ. Cincinnati Medical Center, Cincinnati, OH.

#1104 2:10 ACTIVATION OF PROTO-ONCOGENES IN MOUSE LUNG TUMORS. G D Stoner, M You, R R Maronpot, and M W Anderson. Medical College of Ohio, Toledo, OH and NIEHS, Research Triangle Park, NC.

#1105 2:40 BIOCHEMICAL PROCESSING OF DNA ADDUCTS OF THE ANTICANCER DRUG CISPLATIN. J M Essigmann. Division of Toxicology, Whitaker College of Health Sciences and Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA.

#1106 3:10 ROLE OF CHROMATIN CONFORMATION IN MODIFICATION OF SPECIFIC CRITICAL GENES. G E Milo. The Ohio State University Comprehensive Cancer Center and Department of Medical Biochemistry, Columbus, OH.

**WEDNESDAY AFTERNOON, FEBRUARY 26**

1:30 p.m.-4:00 p.m.

CONVENTION CENTER—ROOM 607

**PLATFORM SESSION: REACTIVE INTERMEDIATES AND COVALENT BINDING**

**Chairpersons:** Garold S. Yost, University of Utah, Salt Lake City, UT and Edward A. Khairallah, University of Connecticut, Storrs, CT

#1107 1:30 MEASUREMENT OF FREE RADICAL-INDUCED BASE DAMAGE IN DNA. A F Fuciarelli, E C Sisk, and J D Zimbrick. Biology and Chemistry Department, Battelle, Pacific Northwest Laboratory, Richland, WA. Sponsor: D L Springer.

#1108 1:45 TRANSFORMATION OF MYOGLOBIN TO AN OXIDASE BY REACTIVE METABOLITES: TOXICOLOGICAL IMPLICATIONS. Y Osawa, J F Darbyshire, P J Steinbach, and B R Brooks. Laboratory of Chemical Pharmacology, NHLBI and the Division of Computer Research and Technology, National Institutes of Health, Bethesda, MD. Sponsor: L R Pohl.

#1109 2:00 METABOLIC ACTIVATION OF TRIS(2,3-DIBROMOPROPYL)-PHOSPHATE TO REACTIVE INTERMEDIATES: COVALENT BINDING, REACTIVE METABOLITE FORMATION AND DNA DAMAGE *IN VIVO*. P G Pearson<sup>1</sup>, K G Omichinski<sup>2</sup>, J A Holme<sup>3</sup>, G Brunborg<sup>3</sup>, E J Soderlund<sup>3</sup>, E Dybing<sup>3</sup>, and S D Nelson<sup>2</sup>. <sup>1</sup>Drug Metabolism Research, The Upjohn Company, Kalamazoo, MI; <sup>2</sup>Department of Medicinal Chemistry, School of Pharmacy, University of Washington, Seattle, WA; and <sup>3</sup>Department of Toxicology, National Institute of Public Health, Oslo, Norway.

#1110 2:15 POSSIBLE ROLE OF FREE RADICAL FORMATION IN CLOZAPINE-INDUCED AGRANULOCYTOSIS. V Fischer, J A Haar, L Greiner, R V Lloyd\*, and R P Mason\*. Drug Safety Dept., Sandoz Pharma., Basel, Switzerland; \*Lab Molecular Biophysics, NIEHS, RTP, NC. Sponsor: G Lucier.

#1111 2:30 DIRECT PHOTOCHEMICAL TOXICITY TO PROSTATE TUMOR SLICES. J Hampton and S Selman. Departments of Pathology and Urology, Medical College of Ohio, Toledo, OH.

#1112 2:45 INACTIVATION OF GLYCERALDEHYDE-3-PHOSPHATE DEHYDROGENASE (GAPDH) BY N-ACETYL-p-BENZOQUINONE IMINE (NAPQI). E C Dietze, A Schaffer and S D Nelson. Department of Medicinal Chemistry, School of Pharmacy, University of Washington, Seattle, WA.

#1113 3:00 METABOLISM OF 3-METHYLINDOLE BY VACCINIA-EXPRESSED CYTOCHROME P450 ENZYMES. J R Thornton-Manning, F J Gonzalez and G S Yost. Dept. of Pharmacol. and Toxicol., University of Utah, Salt Lake City, UT and NIH.

2025807120

- #1114 3:15 **ROLE OF pH IN THE BIOREDUCTIVE ACTIVATION OF MITOMYCIN C BY DT-DIAPHORASE.** D Siegel, \*N W Gibson and D Ross. Molecular Toxicology Environ. Health Sci. Prog., School of Pharmacy, Univ. of Colorado, Boulder, CO. and \*School of Pharmacy, Univ. of S. California, Los Angeles, CA.
- #1115 3:30 **METABOLISM AND BLADDER TOXICITY OF CYCLOPHOSPHAMIDE (CP) IN MICE.** L Fraiser and J P Kehler. Division of Pharmacology and Toxicology, College of Pharmacy, The University of Texas at Austin, Austin, TX.
- #1116 3:45 **STABLE MECHANISTIC STUDIES ON THE OXIDATION OF 3-METHYLINDOLE.** G L Skiles and G S Yost. Dept. of Pharmacology and Toxicology, University of Utah, Salt Lake City, UT.

#### **WEDNESDAY AFTERNOON, FEBRUARY 26**

**1:30 p.m.-4:00 p.m.**

**CONVENTION CENTER—ROOM 608**

#### **PLATFORM SESSION: PHAGOCYTIC CELL INDUCED INJURY**

**Chairpersons:** Steven I. Shedlofsky, Veterans Administration Medical Center, Lexington, KY and Andrij Holian, University of Texas, Houston, TX

- #1117 1:30 **QUESTIONABLE ROLE OF AH RECEPTOR IN MEDIATING ENHANCED ENDOTOXICITY.** S Shedlofsky, N Hoglen, A Swim, and L Robertson. Dept. Medicine, VA Hosp and Graduate Center for Toxicology, University of Kentucky, Lexington, KY.
- #1118 1:45 **EFFECTS OF XENOBIOTICS ON SERUM TUMOR NECROSIS FACTOR (TNF) AND INTERLEUKIN-6 (IL-6) RELEASE AFTER LPS IN RATS.** N Hoglen, A Swim, L Robertson, and S Shedlofsky. Dept. Med., VA Hosp. and Grad. Ctr. for Toxicol., Univ. of KY, Lexington, KY.
- #1119 2:00 **INHIBITION OF MACROPHAGE FUNCTION AMELIORATES ACETAMINOPHEN HEPATOTOXICITY.** D L Laskin, C R Gardner, J A Todaro, V Price and D Jollow. Joint Grad. Prog. Toxicol., Rutgers University, Piscataway, NJ and Univ. S. Carolina, Charleston, SC.
- #1120 2:15 **FIBROGENIC PARTICULATE STIMULATION OF THE HUMAN ALVEOLAR MACROPHAGE (AM).** A Holian, R Hamilton, R C Perkins and R K Scheule. Depts. of Int. Med. and Pharmacol., The University of Texas Medical School, Houston, TX.
- #1121 2:30 **MODULATION OF QUARTZ AND CHRYSOTILE-INDUCED PRODUCTION OF REACTIVE OXYGEN METABOLITES.** K M Savolainen, M Tuomala, and M Holopainen. Dept. Environ. Hyg. Toxicol., Natl. Publ. Hlth. Inst., Kuopio, Finland.
- #1122 2:45 **EFFECTS OF OZONE INHALATION ON RAT ALVEOLAR MACROPHAGE (MP) PRODUCTION OF REACTIVE NITROGEN AND OXYGEN INTERMEDIATES.** K Pendino, C Punjabi, C Gardner, J Laskin, D Laskin. Joint Graduate Program in Toxicology, Rutgers University and UMDNJ-RW Johnson Medical School, Piscataway, NJ.
- #1123 3:00 **GENERATION OF FREE RADICALS FROM PHAGOCYTES INDUCED BY OCCUPATIONAL MINERALS.** V Valkyathan, N S Dalal, J F Mega, and X Shi. Div. of Resp., Dis. Studies, NIOSH and Chem. Dept., West Virginia Univ., Morgantown, WV. Sponsor: V Castranova.
- #1124 3:15 **EFFECTS OF HYPEROXIA ON THE ACTIVITY OF RAT PULMONARY MACROPHAGES.** V Castranova, J Y C Ma, M W Dedhia, N S Dalal, M Billie, and V Valkyathan. Div. Respiratory Disorder Studies, NIOSH, and Div. Pulmonary Medicine, and Dept. of Chemistry, West Virginia University, Morgantown, WV.
- #1125 3:30 **BRONCHO-ALVEOLAR LAVAGE FLUID ENZYMES AFTER EXPOSURE OF MICE TO RICIN AND RICIN B CHAIN AEROSOLS.** D A Creasia, S Bavari, K A Bostian and D M Walters. United States Army Medical Research Institute of Infectious Diseases, Frederick, MD.
- #1126 3:45 **RICIN AND RICIN B CHAIN STIMULATE THE RELEASE OF TUMOR NECROSIS FACTOR-ALPHA FROM ALVEOLAR MACROPHAGES.** S Bavari\*, D M Walters, D A Creasia. US Army Medical Research Institute of Infectious Diseases, Frederick, MD.

#### **WEDNESDAY AFTERNOON, FEBRUARY 26**

**1:30 p.m.-4:00 p.m.**

**CONVENTION CENTER—ROOM 611**

#### **PLATFORM SESSION: RECEPTORS AND SIGNAL TRANSDUCTION**

**Chairperson:** Donald A. Fox, University of Houston, Houston, TX and Lucio G. Costa, University of Washington, Seattle, WA

- #1127 1:30 **ENTERIC GABA-B RECEPTORS AS MOLECULAR TARGETS FOR IVERMECTIN IN MAMMALS.** T Coccini, S M Candura, L Manzo, L G Costa and M Tonini. Department of Pharmacology, University of Pavia, Italy and Department of Environmental Health, University of Washington, Seattle, WA.
- #1128 1:45 **ENHANCEMENT OF GABA-MEDIATED RESPONSE BY LANTHANUM.** M Yan, and T Narahashi. Department of Pharmacology Northwestern Univ. Med. Sch., Chicago, IL.
- #1129 2:00 **INSECTICIDE KINETICS AT THE GABA<sub>A</sub> RECEPTOR NONCOMPETITIVE BLOCKER BINDING SITE.** J E Hawkinson and J E Casida. Pesticide Chemistry and Toxicology Laboratory, Dept. Entomological Sciences, University of California, Berkeley, CA. Sponsor: E T Wei.

2025807121

- #1130 2:15 **A BIOLOGICALLY-BASED MODEL FOR NICOTONIC RECEPTOR DYNAMICS IN THE RAT BRAIN.** D R Plowchalk\*, E N Fluhler, P M Lippiello, and J D deBethizy. \*Duke University Medical Center, Durham, NC and RJR/Nabisco, Winston-Salem, NC.
- #1131 2:30 **LIPID PEROXIDATION-INDUCED ALTERATION OF MEMBRANE FLUIDITY AND MUSCARINIC CHOLINERGIC BINDING IN RAT FRONTAL CORTEX: AN *IN VITRO* STUDY.** C Ghosh, R M Dick, and S F Ali. Div. Reprod. and Dev. Tox., NCTR, Jefferson, AR and School of Pharmacy, Northeast Louisiana University, Monroe, LA. (This abstract is presented as abstract #667A in the Tuesday Morning Molecular/Cellular Toxicology Poster Session.)
- #1132 2:45 **THE ROLE OF NMDA RECEPTOR ACTIVATION IN CYANIDE NEUROTOXICITY IN PRIMARY HIPPOCAMPAL CULTURES.** G E Isom, G K W Yim and M N Patel. Dept. of Pharmacol. and Toxicol., School of Pharmacy and Pharmacol. Sciences, Purdue University, W. Lafayette, IN.
- #1133 3:00 **PARAOXON Binds TO DIFFERENT SITES ON THE MUSCARINIC RECEPTOR AND ITS COUPLED EFFECTOR SYSTEM IN RAT SUBMAXILLARY GLAND CELLS.** D A Jett, E A M Abdallah, M E Eldefrawi, and A T Eldefrawi. Department of Pharmacology and Experimental Therapeutics, University of Maryland, School of Medicine, Baltimore, MD.
- #1134 3:15 **MODULATION OF M1 AND M2 MUSCARINIC RECEPTOR SUBTYPES IN RAT BRAIN AREAS BY REPEATED EXPOSURES TO AN ORGANOPHOSPHORUS INSECTICIDE.** B E Fitzgerald and L G Costa. Dept. of Environmental Health, University of Washington, Seattle, WA.
- #1135 3:30 **CHLORPYRIFOS OXON Binds WITH HIGH AFFINITY TO A POPULATION OF MUSCARINIC RECEPTORS IN RAT STRIATUM.** R A Huff, J Knoth-Anderson, and M B Abou-Donia. Duke University Medical Center, Durham, NC.
- #1136 3:45 **ABILITY OF LEUKOTRIENES TO DECREASE LIGAND BINDING AT THE CENTRAL BENZODIAZEPINE RECEPTOR.** H L Komiskey and J Harper. The Xavier Institute of Bioenvironmental Toxicology, Xavier University of Louisiana, College of Pharmacy, New Orleans, LA.

**WEDNESDAY AFTERNOON, FEBRUARY 26  
CONVENTION CENTER—ROOM 605**

**POSTER DISCUSSION SESSION: OCULAR/DERMAL *IN VITRO* TOXICITY ASSESSMENT**

Chairpersons: Daniel Acosta, University of Texas, Austin, TX and John M. Frazier, Johns Hopkins University, Baltimore, MD

Displayed: 1:30 p.m.-4:30 p.m.  
Discussion: 2:30 p.m.-4:30 p.m.

- #1137 **COMPARISON TESTING OF OPHTHALMIC AGENTS BY *IN VIVO* IN RABBITS VERSUS *IN VITRO* TOXICOLOGY.** S Matsumoto, I M Ismail, O Angelov, C Vangyi, M Wong, S Hickok, K Palmer, B Brar. Allergan Pharmaceuticals, Safety Evaluation Department, Irvine, CA.
- #1138 **EVALUATION OF FIVE *IN VITRO* ASSAYS AS PRESCREENS FOR *IN VIVO* OCULAR IRRITATION POTENTIAL OF PHARMACEUTICALS.** J R Hincks\*, T J B Gray, E I Fischer\*, C A Chrestensen\*, J Richardson, and H M Olson. Toxicology Dept., Sterling Research Group, \*Rensselaer, NY and Alnwick, Northumberland, UK.
- #1139 **EVALUATION OF COMBINATIONS OF TEST RESULTS FROM THREE *IN VITRO* METHODS ON FIFTY CHEMICALS TO PREDICT OCULAR IRRITATION.** V C Gordon, B Realica, K Atkinson\* and M Balls\*. Ropak Laboratories, Irvine, CA, and \*Frame, Nottingham, UK.
- #1140 **ASSESSING EYE IRRITATION POTENTIAL USING THE 10-DAY CHORIOALLANTOIC MEMBRANE VASCULAR ASSAY (10 DAY CAMVA).** D K Waters, D M Bagley, B M Kong, and S J De Salva. Colgate-Palmolive Company, Piscataway, NJ.
- #1141 **TESTING OCULAR IRRITANCY *IN VITRO* USING SKIN<sup>2</sup> DERMAL MODEL IN THE SILICON MICROPHYSIOMETER.** K R Miller\*, G C Mun\*, and D Triglia. \*Microbiological Associates, Inc., Rockville, MD and Marrow-Tech, Inc., La Jolla, CA. Sponsor: L L Yang.
- #1142 **HUMAN SKIN CELL CULTURES FOR *IN VITRO* SKIN AND EYE IRRITANCY ASSESSMENTS OF NEAT TEST MATERIALS.** M A Perkins, D A Roberts, and R Osborne. The Procter & Gamble Company, Human Environmental Safety Division, Cincinnati, OH. Sponsor: L Lehman-McKeeman.
- #1143 ***IN VITRO* CYTOTOXICITY/IRRITANCY TESTING USING THE MARROW-TECH 3-DIMENSIONAL SKIN<sup>TM</sup> HUMAN DERMAL MODEL AND SIX DIFFERENT ASSAY SYSTEMS.** D Triglia, J Rust, I Kidd and S S Braa. Marrow-Tech, Inc., La Jolla, CA. Sponsor: D Hobson.
- #1144 **THE LIVING SKIN EQUIVALENT<sup>TM</sup> AS AN *IN VITRO* TOXICITY TESTING MODEL.** R J Gay, M Swiderek, D Nelson, A Ernesti. Organogenesis Inc., Cambridge, MA. Sponsor: P Silber.
- #1145 **USE OF MICROTOX AS AN *IN VITRO* ADJUNCT TO *IN VIVO* DERMAL IRRITATION TESTING.** R J Koslo, A Butler, V Farina. Pharmacology/Toxicology Department, Bristol-Myers Products, Hillside, NJ. Sponsor: T A Re.
- #1146 **ELEVATION OF INTRACELLULAR CALCIUM BY 13-CIS RETINOIC ACID (13-CIS RA) IN PRIMARY RAT KERATINOCYTE MODEL: IMPLICATIONS FOR TOXICITY.** J Giridhar and D Acosta, Div. of Pharmacology and Toxicology, College of Pharmacy, University of Texas at Austin, Austin, TX.

- #1147 REFORMED HUMAN SKIN: POTENTIAL SCREENING TOOL FOR DERMAL IRRITATION TESTING. M D Helman, S Bi-saga, R J Koslo. Pharmacology/Toxicology Department, Bristol-Myers Products, Hillside, NJ. Sponsor: *T A Re*.
- #1148 A MULTIPLE ENDPOINT ASSAY DETERMINES STRUCTURE-SPECIFIC DAMAGE TO A HUMAN SKIN EQUIVALENT. L S Rhoads, J Cook, R G Van Buskirk. Dept. of Biological Sciences, State University of New York, Binghamton, NY. Sponsor: *J Frazier*.

**WEDNESDAY AFTERNOON, FEBRUARY 26**  
**CONVENTION CENTER—ROOM 609**

### **POSTER DISCUSSION SESSION: METHODS IN IMMUNOTOXICOLOGY**

**Chairpersons:** George L. Shopp, Lovelace Medical Foundation, Albuquerque, NM and Malvin L. Stern, Medical College of Virginia, Richmond, VA

**Displayed:** 1:30 p.m.–4:30 p.m.

**Discussion:** 2:30 p.m.–4:30 p.m.

- #1149 ALTERNATIVE RADIOISOTOPIC PROTOCOLS IN A LLNA USING DNFB AND GLUTARALDEHYDE. *M L Stern, T A Brown, and A E Munson*. Pharmacology and Toxicology, Medical College of Virginia/VCU, Richmond, VA.
- #1150 VALIDATION OF THE MURINE LOCAL LYMPH NODE ASSAY FOR CHEMICAL AND PETROCHEMICAL PRODUCTS. P L Ribeiro, D A Edwards, R V House\*, T M Soranno, M A Amoruso. Exxon Biomedical Sciences, Inc., East Millstone, NJ, and \*IIT Research Institute, Chicago, IL. Sponsor: *G F Egan*.
- #1151 HISTOLOGIC FEATURES OF POPLITEAL LYMPH NODE RESPONSES IN BROWN-NORWAY RATS. J P Brouland, \*F Verdier, C Patriarca, *J Descotes*. Laboratory of Immunotoxicology, INSERM U80, Lyon; and \*Hazleton France, L'Arbresle, France.
- #1152 EVALUATION OF THE VITAMIN A ENRICHED DIET IN THE DETECTION OF WEAK CONTACT SENSITIZERS. D M Sailstad, *J S Tepper, D L Doersler and M J K Selgrade\**. ManTech Environmental and \*US EPA, Research Triangle Park, NC.
- #1153 DEVELOPMENT OF AN ASSAY TO MEASURE *IN VIVO* CAPACITY TO GENERATE A CYTOLYTIC T CELL RESPONSE. *K Rodgers, M Grayson, and B H Devens*. Institute of Biological Sciences, Syntex Research, Palo Alto, CA; University of California, Riverside, CA; and Livingston Research Center, University of Southern California, Los Angeles, CA.
- #1154 DEVELOPMENT OF STANDARD OPERATING PROCEDURE FOR MEASUREMENT OF CYTOTOXIC T LYMPHOCYTE (CTL) ACTIVITY FOLLOWING *IN VIVO* ALLO-SENSITIZATION WITH P815 TUMOR CELLS. *L B Steppan, G K DeKrey and N I Kerkvliet*. College of Veterinary Medicine, Oregon State University, Corvallis, OR.
- #1155 INFLUENZA VIRUS-SPECIFIC CYTOTOXIC T LYMPHOCYTE (CTL) RESPONSE FOLLOWING INTRANASAL ADMINISTRATION OF INFLUENZA VIRUS. *G R Burleson and J P Ehrlich\**. Environmental Toxicology Division, USEPA, RTP, NC; \*ManTech Inc., RTP, NC.
- #1156 THE EFFECT OF IMMUNOSUPPRESSANTS ON SERUM IMMUNOGLOBULIN LEVELS IN RECONSTITUTED IMMUNODEFICIENT MICE. *P L Pollock, D R Germolec and M I Luster*. Immunotoxicology Group, NIEHS, RTP, NC.
- #1157 CHARACTERIZATION OF THE ANTIBODY PLAQUE ASSAY FOR DETECTING IMMUNOSUPPRESSIVE CHEMICALS IN RATS. *C Smith and S E Loveless*. E.I. du Pont de Nemours and Co., Haskell Laboratory for Toxicology and Industrial Medicine, Newark, DE.
- #1158 DEVELOPMENT OF ANTIGEN-SPECIFIC ELISA FOR MEASURING IMMUNOGLOBULINS TO SRBC. *L Temple, T T Kawabata\*, A E Munson, and K L White, Jr.* Medical College of VA/VCU, Richmond, and Procter & Gamble, Cincinnati, OH\*.

**WEDNESDAY AFTERNOON, FEBRUARY 26**  
**CONVENTION CENTER—EXHIBIT HALL**

### **POSTER SESSION: RISK ASSESSMENT II**

**Chairperson:** Elizabeth J. Hixson, Radian Corporation, Austin, TX

**Displayed:** 1:30 p.m.–4:30 p.m.

**Attended:** 1:30 p.m.–3:00 p.m.

- #1159 GUIDANCE FOR IDENTIFICATION OF REPRODUCTIVE AND DEVELOPMENTAL HAZARDS. *F Martz, D Oudiz, J Parker, and S DiZio*. Technical Services Branch, California Dept. of Toxic Substances Control, Sacramento, CA.
- #1160 DOSE-RESPONSE MODELING FOR DEVELOPMENTAL TOXICITY. *B C Allen, C Van Landingham, R B Howe, R J Kavlock, C A Kimmel, and E M Faustman*. Clement International, Ruston, LA; Health Effects Res. Lab. USEPA, RTP, NC; Repro. and Devel. Toxicology Branch, USEPA, Washington, DC; Dept. of Env. Hlth., Univ. of Washington, Seattle, WA.
- #1161 EXPOSURE ASSESSMENT FOR WATER CONTAMINANTS: INHALATION AND DERMAL ROUTES. *R G M Wang, N Chiu, and K Bailey*, Office of Water, U.S. EPA, Washington, D.C.
- #1162 RISK TRADEOFFS IN DRINKING WATER DISINFECTION. *J Orme, E V Ohanian and S Regli*. USEPA, Office of Water, Washington, DC..

- #1163 RISK ASSESSMENT OF DI(2-ETHYLHEXYL)ADIPATE (DEHA) IN DRINKING WATER. *J T Du*. U.S. EPA. Office of Water, Washington, DC.
- #1164 PROPOSED CALIFORNIA REGULATIONS FOR MULTIMEDIA RISK ASSESSMENT FOR HAZARDOUS WASTE SITES AND HAZARDOUS WASTE TREATMENT, STORAGE, AND DISPOSAL FACILITIES. *A K Klein, D Oudiz, E Butler, C B Salocks, J Carlisle, R Becker, J Wong*. Cal EPA, Dept of Toxic Substances Control, Sacramento, CA.
- #1165 DETERMINING HAZARDS ASSOCIATED WITH MUNICIPAL SOLID WASTE COMPOSTING. *M Eichelberger, S Richards, \*J Tunkel, and \*E Brady-Roberts*. Syracuse Research Corporation, Cincinnati, OH, \*Syracuse, NY and US EPA, ECAO, Cincinnati, OH. Sponsor: *P McGinnis*.
- #1166 COMPARISON OF TWO METHODOLOGIES FOR ASSESSING HEALTH RISKS ASSOCIATED WITH INDIRECT EXPOSURES TO MSW COMBUSTER EMISSIONS. *P McGinnis, M Eichelberger, and G Rice\**. Syracuse Research Corporation, Cincinnati, OH, Kalamazoo, MI, and \*USEPA, ECAO, Cincinnati, OH.
- #1167 PCDD AND PCDF CONCENTRATIONS IN PUGET SOUND CRABS. *L J Yost, J E Sexton, R A Pastorok*. PTI Environmental Services, Bellevue, WA; and *J Armstrong*, EPA Region 10, Seattle, WA. Sponsor: *R A Schoof*.
- #1168 DIFFERENTIAL PULMONARY BIOAVAILABILITY OF 2, 3, 7, 8-TCDD FROM ENVIRONMENTAL MATERIALS. *C S Nessel, M A Amoruso, T H Umbreit, R J Meeker, M A Gallo*. Graduate Program in Public Health, UMDNJ-RW Johnson Medical School, Piscataway, NJ.
- #1169 AMBIENT AIR CRITERIA FOR RESIDENTIAL EXPOSURE TO TETRACHLOROETHENE. *M J Miller, K G Bogdan and N K Kim*. New York State Department of Health, Bureau of Toxic Substance Assessment, Albany, NY.
- #1170 QUANTITATIVE UNCERTAINTY ANALYSIS OF AB 2588 DEFAULT EXPOSURE PARAMETERS. *K M Connor, T L Copeland, A M Holbrow, D J Paustenbach*. ChemRisk, a Division of McLaren/Hart, Irvine, CA.
- #1171 INFLUENCE OF VENTILATORY PARAMETERS AND RESPIRATORY SURFACE AREA IN DOSIMETRIC MODELS FOR RISK ASSESSMENT. *M G Menache<sup>a</sup>, R R Mercer<sup>a</sup>, J S Tepper<sup>b</sup>, L M Hanna<sup>c</sup>, E A Gross<sup>d</sup>, and A M Jarabek<sup>e</sup>*. <sup>a</sup>Duke University Medical Center, Durham, NC, <sup>b</sup>ManTech, Inc., RTP, NC, <sup>c</sup>Johns Hopkins University, Baltimore, MD, <sup>d</sup>Chemical Industry Institute of Toxicology, RTP, NC, <sup>e</sup>U.S. Environmental Protection Agency, RTP, NC.
- #1172 COMPARISON OF THE NO-OBSERVED-ADVERSE-EFFECT-LEVEL (NOAEL) AND THE LOWEST-OBSERVED-ADVERSE-EFFECT-LEVEL (LOAEL) WITH THE 10% EFFECTIVE CONCENTRATION LEVEL (EC10) IN INHALATION STUDIES OF AIR TOXICS. *C Shoaf<sup>1</sup>, C Spencer<sup>2</sup>, and D Duke<sup>3</sup>*. <sup>1</sup>Environmental Criteria and Assessment Office/RTP, <sup>2</sup>Health Effects Research Laboratory, <sup>3</sup>ManTech Environmental Technology, Inc., RTP, NC.
- #1173 A COMPARATIVE REVIEW OF THE METABOLISM AND TOXICITY OF METAM SODIUM AND METHYLISOTHIOCYANATE. *L Jowa, J A Wisniewski, and M J DiBartolomeis\**. Office of Environmental Health Hazard Assessment, Cal-EPA, Sacramento and \*Berkeley, CA.
- #1174 DOSE-RESPONSE EVALUATION OF METHYLISOTHIOCYANATE (MITC) RELEASED INTO THE AIR. *D J Shusterman, G V Alexeeff and R J Jackson*. California Office of Environmental Health Hazard Assessment, Berkeley, CA.
- #1175 METAM SODIUM AND METHYLISOTHIOCYANATE: TOXIC CHEMICAL SPILL EMERGENCY RESPONSE AND EVALUATION. *M J DiBartolomeis, R J Jackson, H Russell, and A M Fan*. Office of Environmental Health Hazard Assessment (OEHHA), Cal-EPA, Berkeley, CA.
- #1176 THE CANTARA INCIDENT: RISK ASSESSMENT AND INTERIM HEALTH STANDARDS FOR WATER EXPOSURES TO METAM AND METHYL-ISOTHIOCYANATE. *R H F Lam, G A Pollock, and J P Brown*. Office of Environmental Health Hazard Assessment (OEHHA), Cal-EPA, Berkeley, CA.
- #1177 METAM SODIUM DISPOSITION IN THE SACRAMENTO RIVER. *R A Howd and G V Alexeeff*. Office of Environmental Health Hazard Assessment (OEHHA), CA Environmental Protection Agency, Berkeley, CA.
- #1178 THE MATTIACE PETROCHEMICAL CO., INC. SUPERFUND SITE: A HUMAN HEALTH RISK ASSESSMENT CASE STUDY. *A R Schnitz, M D Hartmann, R S Prann, J J Tasca, P J Wang, and N Luke*. IT Corporation, Edison, NJ.
- #1179 TOXICITY ASSESSMENT OF HAZARDOUS WASTE SITES AT A FEDERAL FACILITY. *R H Ross, K A Davidson, P Y Lu, and R A Young*, Biomedical and Environmental Information Analysis Section, Health and Safety Research Division, Oak Ridge National Laboratory, Oak Ridge, TN.
- #1180 HUMAN HEALTH RISKS ASSOCIATED WITH THE CHABAROVICE WASTE SITE IN NORTHWESTERN CZECHOSLOVAKIA. *R D Smith, D W Shelton, B D Davis, S Dwyer, J T Fleissner, and J Beba*. CH2M HILL, Englewood, CO and Aquatest, Prague, Czechoslovakia.
- #1181 HEALTH HAZARDS OF CYANIDE-CONTAINING PESTICIDES IN STORAGE. *C L Liao*. California Dept. of Toxic Subs. Control, Berkeley, CA. Sponsor: *R A Howard*.
- #1182 HAZARD RANKING OF POTENTIAL LEACHING PESTICIDES. *A K Charles and L B Johnson*. Pesticide Regulation Division, Texas Department of Agriculture, Austin, TX.

2025807124

#1183 BURNING OIL FIELDS IN KUWAIT: POSSIBLE INHALATION RISK TO U.S. EMPLOYEES STATIONED IN KUWAIT CITY.  
*W H Koch, G F Hoffnagle, and G L Ginsberg*, TRC Environmental Consultants, Inc., Windsor, CT.

WEDNESDAY AFTERNOON, FEBRUARY 26  
CONVENTION CENTER—EXHIBIT HALL

## POSTER SESSION: METALS TOXICOLOGY II

Chairpersons: Timothy P. Coogan, NCI-FCRDC, Frederick, MD and Vasken Aposhian, University of Arizona, Tucson, AZ

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 3:00 p.m.—4:30 p.m.

- #1184 PHARMACOKINETICS OF 2,3-DIMERCAPTOPROPANE-1-SULFONIC ACID (DMPS) GIVEN IV OR PO TO HUMANS. K M Hurlbut<sup>+</sup>, R M Maiorino\*, R C Dart<sup>+</sup> and H V Aposhian\*, Dept. of <sup>+</sup>Surgery, \*Molecular and Cellular Biology, University of Arizona, Tucson, AZ.
- #1185 SPECIAL ORGANOMERCURIAL-VOLATILIZING BACTERIA IN THE SEDIMENT OF MINAMATA BAY. K Nakamura, H Uchiyama and O Yagi. National Inst. of Minamata Disease, Kumamoto and National Inst. for Environmental Studies, Onogawa, Japan. Sponsor: C Tohyama.
- #1186 COMPARISON OF DIFFERENT MERCURIC COMPOUND EFFECTS ON MODEL MEMBRANES AND RED CELL MEMBRANES. M Delnomdedieu and J W Allis. Health Effects Research Lab, US EPA RTP, NC. Sponsor: J E Simmons.
- #1187 MERCURY-ENHANCED H<sub>2</sub>O<sub>2</sub> FORMATION *IN VIVO* AND *IN VITRO* IN KIDNEY MITOCHONDRIA. B-O Lund, D M Miller and J S Woods. Dept. of Environmental Health, University of Washington, Seattle, WA.
- #1188 REACTIVITY OF Hg(II) WITH SUPEROXIDE: EVIDENCE OF A CATALYTIC DISMUTATION OF SUPEROXIDE BY Hg(II). D M Miller, B O Lund, and J S Woods. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #1189 A ROLE FOR GLUTATHIONE IN THE TRANSPORT OF METHYLMERCURY ACROSS THE BLOOD-BRAIN BARRIER. L E Kerper, N Ballatori, and T W Clarkson. Environmental Health Sciences Center, Department of Biophysics, University of Rochester School of Medicine, Rochester, NY.
- #1190 GLUTATHIONE-DEPENDENT BILIARY-HEPATIC RECYCLING OF METHYL MERCURY. W J Dutczak, and N Ballatori. Dept. of Biophysics, Univ. of Rochester School of Medicine, Rochester, NY.
- #1191 COMPARATIVE BRAIN DISTRIBUTION OF INORGANIC MERCURY (Hg<sup>2+</sup>) FOLLOWING SUBCHRONIC EXPOSURE TO METHYLMERCURY (MeHg) HYDROXIDE AND MERCURIC CHLORIDE IN THE MONKEY. D Shen, T Burbacher, K Motteret, L Friberg, R Body, B Lind, and M Vahter; University of Washington, Seattle, WA, and The Karolinska Institute, Stockholm, Sweden.
- #1192 METHYL-MERCURY TRANSPORT AND TOXICITY ALONG THE ISOLATED PERFUSED RENAL PROXIMAL TUBULE OF THE RABBIT. D W Barfuss and R K Zalups. Department of Biology, Georgia State University, Atlanta, GA and Division of Basic Medical Sciences, Mercer University School of Medicine, Macon, GA.
- #1193 TUBULAR SECRETION AND REABSORPTION OF MERCURY COMPOUNDS IN MOUSE KIDNEY. N Imura, T Tanaka and A Naganuma. Dept. of Public Health, Sch. of Pharmaceutical Sci., Kitasato University, Minatoku Tokyo, Japan.
- #1194 RENAL ACCUMULATION OF METHYLMERCURY FOLLOWING A REDUCTION IN RENAL MASS. P J Kostyniak, D W Barfuss and R K Zalups. Department of Pharmacology, SUNY at Buffalo, Buffalo, NY; Biology Department, Georgia State University, Atlanta, GA and Division of Basic Medical Sciences, Mercer University School of Medicine, Macon, GA.
- #1195 URINARY PORPHYRIN PROFILE AS A BIOMARKER OF MERCURY EXPOSURE AND NEPHROTOXICITY. M A Bowers, H A Davis and J S Woods. Dept. of Environmental Health, U of Washington, Seattle, WA.
- #1196 QUANTITATIVE ANALYSIS OF PORPHYRINS IN RAT AND HUMAN URINE AND EVALUATION OF URINARY PORPHYRIN PROFILES DURING MERCURY AND LEAD EXPOSURE. H A Davis, M A Bowers and J S Woods. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #1197 ENHANCEMENT OF PHENYTOIN FETAL AND MATERNAL TOXICITY BY LOW-LEVEL EXPOSURE TO METHYLMERCURY. S Srivasta, and P G Wells. Faculty of Pharmacy, University of Toronto, Toronto, Canada.
- #1198 PUBERAL GROWTH RETARDATION IN PRIMATES: A LATENT EFFECT OF *IN UTERO* EXPOSURE TO METHYLMERCURY. K S Grant-Webster, T M Burbacher, and N K Motteret. Department of Environmental Health, University of Washington, Seattle, WA.
- #1199 MICROCELL-MEDIATED TRANSFER OF MAMMALIAN X CHROMOSOMES INDUCES SENESCENCE IN NICKEL-TRANSFORMED CHINESE HAMSTER CELLS. M Costa, X Wang, X Lin, R K Bhamra, X W Lee, C B Klein. Institute of Environmental Medicine, NYU Medical Center, New York, NY.
- #1200 SPECIES RELATED DIFFERENCES IN CHROMIUM DISTRIBUTION AFTER ORAL AND INTRAPERITONEAL ADMINISTRATION IN MICE AND RATS. B Karagacin, S Cosentino, K S Squibb and M Costa. Institute of Environmental Medicine, NYU Medical Center, New York, NY.

2025807125

- #1201 RELATIONSHIP OF CHROMATE-INDUCED DNA DAMAGE TO CHROMOSOMAL ABERRATIONS. J P Wise, J Xu, and S R Paterno. Department of Pharmacology, George Washington University Medical Center, Washington, DC.
- #1202 AN SDS-PRECIPITATION ASSAY FOR DETECTION OF CHROMATE-INDUCED DNA-PROTEIN CROSSLINKS. A Zhitkovich, and M Costa. Institute of Environ. Med., NYU Medical Center, New York, NY.
- #1203 CHROMIUM-51 BINDING TO DNA IN INTACT HUMAN OSTEOSARCOMA CELLS. K Salnikow and M Costa. Institute of Environmental Medicine, New York University Medical Center, New York, NY.
- #1204 STUDY OF CHROMIUM INDUCED AMINO ACID-DNA CROSSLINKS IN MAMMALIAN CELLS. X Lin and M Costa, Inst. Environ. Med., NYU Medical Center, New York, NY.
- #1205 CHROMIUM (Cr) DISTRIBUTION AFTER INTRATRACHEAL INSTILLATION OF HEXAVALENT CHROMIUM (Cr(VI)) SALTS IN RATS. E C Faria and C M Wilmer, Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ, and T Howell and S I Shupack, Villanova University, Villanova, PA.

**WEDNESDAY AFTERNOON, FEBRUARY 26  
CONVENTION CENTER—EXHIBIT HALL**

**POSTER SESSION: NEUROTOXICOLOGY: TOXIC METALS**

Chairperson: Michael Aschner, Albany Medical College, Albany, NY

Displayed: 1:30 p.m.–4:30 p.m.

Attended: 1:30 p.m.–3:00 p.m.

- #1206 NEURONAL PHOSPHOLIPASE A<sub>2</sub> ACTIVATION BY METHYL MERCURY IS LIPOPEROXIDATION INDEPENDENT. M A Verity, T Sarafian and A Sevanian. Div. Neuropathology, UCLA and Inst. for Toxicology, USC, Los Angeles, CA.
- #1207 ALTERATIONS IN N-CAM EXPRESSION BY METHYLMERCURY: *IN VIVO* AND *IN VITRO* CORRELATION. R D Graff\*, L A Lagunowich and K R Reuhl. Neurotoxicology Laboratories, Rutgers Univ. College of Pharmacy, and <sup>1</sup>JGPT, Piscataway, NJ.
- #1208 EFFECTS OF METHYLMERCURY (MeHg) ON SYNAPTIC TRANSMISSION OF RAT ISOLATED HIPPOCAMPAL SLICES. Y Yuan and W D Atchison. Dept. Pharmacology/Toxicology. Michigan State University, E. Lansing, MI.
- #1209 GLIAL RESPONSE TO METHYL MERCURY (MeHg) IN RAT BRAIN: REGIONAL-, DOSE- AND TIME-RESPONSE. H A N El-Fawal, A R Little, Z Gong and H L Evans. NYU Medical Center, Institute of Environmental Medicine, Tuxedo, New York.
- #1210 EFFECTS OF MERCURY COMPOUNDS ON MUSCARINIC RECEPTOR SUBTYPES BINDING AND FUNCTION IN THE RAT BRAIN. A F Castoldi, S M Candura, L Manzo\* and L G Costa. Dept. of Environmental Health, Univ. of Washington, Seattle, WA; Fondazione Clinica del Lavoro, Pavia, Italy; and \*Dept. of Pharmacology, Univ. of Pavia Medical School, Pavia, Italy.
- #1211 DIFFERENTIAL CYTOTOXIC EFFECTS OF METHYLMERCURY AND ORGANOTIN COMPOUNDS ON MATURE AND IMMATURE NEURONAL CELLS AND NON-NEURONAL CELLS *IN VITRO*. M Kunimoto and T Miura. Natl. Inst. Environ. Stud., Tsukuba, Japan. Sponsor: K T Suzuki
- #1212 EFFECTS OF *IN UTERO* METHYLMERCURY EXPOSURE ON A DELAYED SPATIAL ALTERNATION TASK IN MONKEYS. T M Burbacher, S G Gilbert, L M Howard and C D Munkers. Department of Environmental Health, University of Washington, Seattle, WA.
- #1213 METHYLMERCURY (MeHg)—INDUCED INCREASES IN [Ca<sup>2+</sup>] IN NG108—15 CELLS ARISE FROM EXTRA- AND INTRACELLULAR SOURCES. M F Hare and W D Atchison. Dept. Pharm. Tox., Michigan State University, E. Lansing, MI.
- #1214 PRENATAL EXPOSURE TO METHYLMERCURY ALTERS OPERANT BEHAVIOR AND RESPONSE TOPOGRAPHY IN SQUIRREL MONKEYS. B Logdberg, M C Newland, Y Sheng, M Berlin, B Weiss. Lund University, Sweden; Auburn University, AL; U of Rochester, NY.
- #1215 INTERACTION OF INORGANIC MERCURY WITH CELL SIGNALING SYSTEMS IN PC12 Cells. A D Rossi, L Manzo, M Vahter, O Larsson, P O Berggreen, S Orrenius, and P Nicotera. Dept. of Toxicology, Karolinska Institutet, Stockholm, Sweden.
- #1216 DEVELOPMENTAL EXPOSURE TO LEAD IN THE MONKEY AFFECTS PATTERN OF WATER CONSUMPTION. D C Rice. Health and Welfare, Ottawa, ONT, Canada, and R B Mailman. University of North Carolina, Chapel Hill, NC.
- #1217 PRENATAL LEAD EXPOSURE ALTERS OPERANT BEHAVIOR IN SQUIRREL MONKEYS. M C Newland, B Logdberg, Y Sheng, M Berlin, B Weiss. Auburn U., AL; Lund University Sweden; U. of Rochester, NY.
- #1218 LEAD (PB) ATTENUATES MK-801'S EFFECTS ON A MULTIPLE REPEATED ACQUISITION (RA) AND PERFORMANCE (P) SCHEDULE. J Cohn, and D A Cory-Slechta. Environmental Health Sciences Center, Univ. Rochester Med. Ctr., Rochester, NY.
- #1219 DEVELOPMENTAL NEUROTOXICITY EVALUATION OF LEAD NITRATE IN Cr:CD<sup>®</sup>BR VAF/Plus<sup>®</sup> RATS. J A Foss, A A Hoberman, and M S Christian. Argus Research Laboratories Inc., Horsham, PA.
- #1220 LEAD INTERFERES WITH CALCIUM-DEPENDENT ADHESION MOLECULES ON NEURAL CELLS *IN VITRO*. L A Lagunowich and K R Reuhl. Neurotoxicology Laboratories, Rutgers Univ. College of Pharmacy, Piscataway, NJ.

2025807126

- #1221 LEAD DIRECTLY INHIBITS ISOLATED ROD PHOTORECEPTOR cGMP PHOSPHodiESTERASE (cGMP-PDE): MAGNESIUM INTERACTIONS. *D Srivastava<sup>1</sup>, R L Hurwitz<sup>2</sup>, and D A Fox<sup>1</sup>*. <sup>1</sup>University of Houston College of Optometry and <sup>2</sup>Dept. of Pediatrics and Cell Biology, Baylor College of Medicine, Houston, TX.
- #1222 POST WEANING LEAD (Pb) ALTERS DOPAMINE (DA)  $B_{MAX}$  AND REGULATION. *D V Widzowski, M J Pokora and D A Cory-Slechta*. Environmental Health Sciences Center, Univ. of Rochester Med. School, Rochester, NY.
- #1223 POSTNATAL LEAD (Pb) EXPOSURE INDUCES A SUSTAINED FUNCTIONAL D<sub>2</sub>DOPAMINERGIC (DA) SUPERSensitivity. *D A Cory-Slechta, MJ Pokora, and D V Widzowski*. Environmental Health Sciences Center, Univ. of Rochester Med. School, Rochester, NY.
- #1224 ATP INHIBITS LEAD-MEDIATED INCREASE IN INOSITOL 1,4,5-TRISPHOSPHATE AND 1,3,4,5-TETRAKISPSPHATE RECEPTOR BINDING IN RAT CEREBELLUM. *P J S Vig and D Desaiyah*. Dept. of Neurology, Univ. of Mississippi Medical Center, Jackson, MS.
- #1225 INHIBITION OF NOREPINEPHRINE-STIMULATED INOSITOL (1,4,5) TRISPHOSPHATE FORMATION BY LEAD IN PRIMATE ASTROCYTE CULTURES. *D Vitarella, \*J L Aschner, \*\*H K Kimelberg and M Aschner*. Departments of Pharmacology and Toxicology, \*Pediatrics, and \*\*Division of Neurosurgery, Albany Medical College, Albany Medical College, Albany, NY.
- #1226 CHRONIC EXPOSURE TO ENVIRONMENTAL LEVELS OF LEAD (Pb) IMPAIRS INDUCTION OF LONG-TERM POTENTIATION (LTP) IN RAT HIPPOCAMPUS. *S M Lasley, J Polan-Curtain and D L Armstrong*. Dept. Basic Sci., U. Illinois Coll. of Med., Peoria, IL; and Div. Life Sci., U. Texas-San Antonio, San Antonio, TX.
- #1227 GLIAL RESPONSE TO TRIMETHYL LEAD (TlPb) IN THE MACAQUE MONKEY. *H L Evans, B S Jortner<sup>1</sup> and H A N El-Fawal*. NYU Inst Environ Med, Tuxedo, NY and <sup>1</sup>Virginia Tech, Blacksburg, Va.

**WEDNESDAY AFTERNOON, FEBRUARY 26  
CONVENTION CENTER—EXHIBIT HALL**

## **POSTER SESSION: NEUROTOXICOLOGY II**

**Chairperson:** Merle G. Paule, USFDA, Jefferson, AR

**Displayed:** 1:30 p.m.–4:30 p.m.

**Attended:** 3:00 p.m.–4:30 p.m.

- #1228 ROLE OF RAT BRAIN LIPOXYGENASE IN XENOBIOTIC OXIDATION: ALDRIN EPOXIDATION. *K Datta, A K Naidu, A K Naidu, and A P Kulkarni*. Florida Toxicology Research Center, College of Public Health, University of South Florida, Tampa, FL.
- #1229 PYRETHRROIDS CAUSE ACTIVATION OF PROTEIN KINASE C PATHWAY IN THE RAT BRAIN SYNAPSE. *E Enan and F Matsumura*. Dept. of Environmental Toxicology, University of California, Davis, CA.
- #1230 IN VITRO EFFECTS OF TRIOGANOTINS ON INOSITOL 1,4,5-TRISPHOSPHATE RECEPTOR BINDING IN RAT BRAIN. *S N Pentyala, D E Sekhon\*, and D Desaiyah*. Dept. of Neurology, University of Mississippi Medical Center, Jackson, MS; and \*Dept. of Biology, Jackson State University, Jackson, MS.
- #1231 EFFECT OF REPEATED ORGANOPHOSPHATE ADMINISTRATION ON CARBACHOL-STIMULATED PHOSPHOINOSITIDE METABOLISM IN RAT BRAIN. *W R Mundy, T R Ward, V Forbis, and H A Tilson*. Neurotoxicology Division, USEnvironmental Protection Agency, Research Triangle Park, NC.
- #1232 SUSTAINED EFFECTS OF PILOCARPINE ON BRAIN INOSITOL LIPID SIGNALING AND TOTAL TISSUE CALCIUM IN YOUNG AND AGED RATS. *M R Hirvonen and K Savolainen*. Natl. Publ. Hlth. Inst., Dept. Env. Hyg. Toxicol., Kuopio, Finland.
- #1233 IN VIVO EFFECTS OF ORGANOCHLORINE PESTICIDES ON INOSITOL POLYPHOSPHATE RECEPTOR BINDING AND METABOLISM IN RAT BRAIN. *B D Mehrotra, P J S Vig\* and D Desaiyah\**. Dept. of Chemistry, Tougaloo College, Tougaloo, MS and \*Dept. of Neurology, Univ. of Mississippi Medical Center, Jackson, MS.
- #1234 EFFECT OF DOXORUBICIN ON ENDOTHELIN-1 BINDING AND PROTEIN KINASE C ACTIVITY IN RAT BRAIN. *C V K Mydhili, P J S Vig and D Desaiyah*. Dept. of Neurology, Univ. of Mississippi Medical Center, Jackson, MS.
- #1235 INCREASED TOXICITY OF TRIMETHYLTIN (TMT) AND DECREASED C-FOS IN AGED RAT HIPPOCAMPUS. *A C Scallet, N Pothuluri, S I Nikonorov<sup>1</sup>, F A Caputo, R L Rountree, J C Matthews<sup>2</sup>, and R W Hart*. National Center for Toxicological Research, Jefferson, AR; <sup>1</sup>Academy of Sciences of USSR, Moscow; and <sup>2</sup>University of Mississippi, University, MS.
- #1236 DIFFERENTIAL INDUCTION OF C-FOS PROTEIN IN THE CNS FOLLOWING ACUTE EXPOSURE TO KCN. *G Pavlakovic, A Rathinavelu and G E Isom*. Dept. of Pharmacology and Toxicology, School of Pharmacy and Pharmacal. Sciences, Purdue Univ., West Lafayette, IN.
- #1237 ROLE OF DOPAMINE-1 (D<sub>1</sub>) RECEPTORS IN COCAINE (CO) TOXICITY MEDIATED BY CENTRAL AND PERIPHERAL ACTIONS OF COCAINE. *J M Witkin and J L Katz*. Drug Development Group, Psychobiology Laboratory, NIDA Addiction Research Center, Baltimore, MD. Sponsor: *J M Witkin*.

- #1238 EFFECTS OF ACUTE COCAINE ADMINISTRATION ON BRAIN COCAINE RECEPTORS IN WISTAR-KYOTO (WKY) AND SPONTANEOUSLY HYPERTENSIVE RATS (SHR). C Jin, R W Rockhold, B Hoskins and I K Ho. Department of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS.
- #1239 PERINATAL EXPOSURE TO AROCLOR 1016 ELEVATES BRAIN DOPAMINE CONCENTRATION IN THE RAT. R F Seegal. Wadsworth Center, NYS Dept. of Health and Dept. of Environ. Hlth. and Toxicol., School of Public Health, University at Albany, Albany, NY.
- #1240 INTRASTRIATAL INJECTION OF PCBs DECREASES STRIATAL DOPAMINE CONCENTRATIONS IN RATS. M A Chishti and R F Seegal. Wadsworth Center, NYS Dept. of Health and Dept. of Environ. Hlth. Toxicol., School of Public Health, University at Albany, Albany, NY.
- #1241 EFFECTS OF DISULFIRAM ON RAT HIPPOCAMPAL MITOCHONDRIA: METABOLIC COMPARTMENTATION OF NEUROTOXICITY. J Simonian, D Haldar, E Delmaestro and L Trombetta. St. John's Univ. College of Pharmacy and Allied Health Professions and Dept. of Biological Sciences, NY, NY.
- #1242 EFFECTS OF DISULFIRAM ON RAT HIPPOCAMPAL AND CEREBELLAR GLUTATHIONE PEROXIDASE (GSH-Px) ACTIVITY. E Delmaestro and L Trombetta. St. John's Univ. College of Pharmacy and Allied Health Professions, NY, NY.
- #1243 EFFECT OF CYANIDE ON PLASMA MEMBRANE POTENTIAL OF PC12 CELLS: INVOLVEMENT OF POTASSIUM CHANNELS. M V Latha, J L Borowitz, G K W Yim and G E Isom. Department of Pharmacology and Toxicology, School of Pharmacy and Pharmacal Sciences, Purdue University, West Lafayette, IN.
- #1244 POTASSIUM, GLUTAMATE, AND ASPARTATE HOMEOSTASES IN RAT PRIMARY ASTROCYTE CULTURES ARE ALTERED BY TRIMETHYL TIN (TMT). M Aschner, M Gannon, and <sup>1</sup>H K Kimeberg. Dept. of Pharmacology and Toxicology, and <sup>1</sup>Division of Neurosurgery, Albany Medical College, Albany, NY.
- #1245 ALTERNATING HIGH AND LOW PROTEIN FEEDING ENHANCES TRIMETHYLTIN TOXICITY IN THE RAT. J C Matthews<sup>1</sup> and A C Scallet<sup>2</sup>. <sup>1</sup>Dept. Pharmacol., Univ. of MS, Sch. of Pharmacy and Res. Inst. Pharmaceut. Sci., University, MS, and <sup>2</sup>Div. of Repro. and Devel. Toxicol., Nat'l. Cent. for Toxicological Res., Jefferson, AR. Sponsor: M C Wilson.
- #1246 TRIALKYLTINS DISRUPT OUTER HAIR CELLS *IN VITRO*. W J Clerici and L D Fechter. Division of Toxicological Sciences, The Johns Hopkins School of Hygiene and Public Health, Baltimore, MD.
- #1247 STRAIN COMPARISONS OF TRIMETHYLTIN (TMT) NEUROTOXICITY IN RATS. R C MacPhail, K M Crofton, C J Gordon, V C Moser and J P O'Callaghan. U.S. EPA and ManTech Environmental Technology, RTP, NC.
- #1248 THE RESPONSE OF GLIAL FIBRILLARY ACIDIC PROTEIN (GFAP) IN FOUR BRAIN REGIONS OF ATLANTIC TOMCOD EXPOSED TO PCB. A R Little, J S Duffy<sup>1</sup>, H A N El-Fawal, I Virgin, and H L Evans. New York Univ. Med. Ctr., Institute of Environmental Medicine, Tuxedo, NY, <sup>1</sup>Texaco Inc., Beacon, NY.
- #1249 NEUROTOXICITY OF PODOPHYLLOTOXIN IN RATS. L W Chang, C M Yang, and J F Deng. Univ. of Arkansas for Medical Sciences, Little Rock, AR, Chang-Gung Medical College, and Taipei General VA Hospital, Taipei, Taiwan.
- #1250 AGE RELATED SUSCEPTIBILITY TO MPTP-INDUCED NEUROTOXICITY. S F Ali, S David, G D Newport and W Slikker, Jr. Div. Reprod. and Dev. Toxicol., NCTR, Jefferson, AR.
- #1251 YELLOW STAR THISTLE AND NIGROPALLIDAL ENCEPHALOMALACIA: SEARCH FOR CULPABLE NEUROTOXIN(S). D N Roy, P S Spencer, \*A M Craig, \*L L Blythe, C N Allen, M Lefor, M Seelig, R Kayton. Center for Research on Occupational and Environmental Toxicology, Oregon Health Sciences University, Portland, and \*School of Veterinary Medicine, Oregon State University, Corvallis, Oregon.
- #1252 GLUTATHIONE S-TRANSFERASE (GST) ISOENZYME PROFILES AND ACTIVITY IN BRAIN REGIONS OF THE GUNN RAT. J A Johnson, A El Barbary, S E Kornguth, J F Brugge and F L Siegel. Depts. of Pediatrics, Physiological Chemistry, Neurology and Neurophysiology, the Environmental Toxicology and Waisman Centers, University of Wisconsin, Madison, WI. Sponsor: C R Jefcoate.
- #1253 EVALUATION OF ACRYLAMIDE NEUROTOXICITY USING THE *IN VITRO* HIPPOCAMPAL SLICE PREPARATION. S B Fountain, B S Toner, and J D Rowan. Department of Psychology, Kent State University, Kent, OH. Sponsor: Z Annau.
- #1254 PERSISTENT BEHAVIORAL AND NEUROCHEMICAL CHANGES INDUCED BY ONE EXPOSURE TO CHLORPYRIFOS. P J Bushnell<sup>1,2</sup> K L Kelly<sup>2</sup>, C N Pope<sup>3</sup> and S Padilla<sup>1</sup>. <sup>1</sup>Neurotoxicology Division, U.S. EPA, RTP, NC, <sup>2</sup>ManTech Environmental Technology Inc., RTP, NC, and <sup>3</sup>School of Pharmacy, Northeast Louisiana University, Monroe, LA.
- #1255 NEUROTOXICITY STUDIES IN SPRAGUE-DAWLEY RATS WITH TRIBUTYL PHOSPHATE. C E Healy<sup>1</sup>, P Beyrouty<sup>2</sup>, G Losos<sup>2</sup>, and B R Broxup<sup>2</sup>. <sup>1</sup>Monsanto Company, St. Louis, MO and <sup>2</sup>Bio-Research Laboratories Ltd., Senneville, Quebec, Canada.
- #1256 FUNCTIONAL-MORPHOLOGICAL EFFECTS OF TRIPHENYL PHOSPHITE IN RATS. E J Lehning, J L Mattson, P J Spencer, and K E Stebbins. Dept. Animal Science, Michigan State Univ., E. Lansing, MI and Dow Chemical Company, Midland, MI.
- #1257 ACUTE CHLORPYRIFOS TREATMENT PRODUCES LONG-TERM NEUROCHEMICAL AND NEUROBEHAVIORAL EFFECTS IN ADULT RATS. C N Pope, D P Arthur, T K Chakraborti, J D Farrar. School of Pharmacy, Northeast LA Univ., Monroe, LA.

2025807128

- #1258 SYNERGISTIC NEUROTOXIC EFFECTS OF STYRENE OXIDE AND ACRYLAMIDE ON THE RAT CEREBELLUM. R Mandella, CM Beiswanger, T Roscoe, K R Reuhl and H E Lowndes. Neurotoxicology Laboratories, Rutgers University College of Pharmacy, and JGPT, Piscataway, NJ.
- #1259 EFFECTS OF SEX AND ROUTE OF ADMINISTRATION ON THE TIME COURSE OF ESTERASE INHIBITION FOLLOWING METHYL PARATHION AND METHYL PARAOXON ADMINISTRATION. G N Ramaswamy and J E Chambers. College of Veterinary Medicine, Mississippi State University, Mississippi State, MS.
- #1260 GLYCIDAMIDE, AND ACRYLAMIDE METABOLITE PRODUCES NEUROTOXICITY IN RATS. M B Abou-Donia, S E Ibrahim, J Knoth-Angerson, L Lack. Duke Univ Med Ctr, Durham, NC and M A Friedman, American Cyanamid, Wayne, NJ.
- #1261 CHARACTERIZATION AND FORENSIC APPLICATION OF REACTIVATION PROCESSES FOR CARBAMATE-INHIBITED CHOLINESTERASE. M J Hooper and K A Hunt. Dept. of Environ., Tox., Clemson Univ., Clemson, SC. Sponsor: J F Hobson.
- #1262 MODIFICATION OF MIPAFOX-INDUCED INHIBITION AND AGING OF NTE IN NEUROBLASTOMA CELLS. A C Nostrand and M Ehrich. VA-MD Regional College of Veterinary Medicine, Blacksburg, VA.
- #1262-A INHIBITION AND AGING OF ACETYLCHOLINESTERASE IN CENTRAL AND PERIPHERAL TISSUES FOLLOWING SINGLE EXPOSURE TO CHLORPYRIFOS. R L Carr and J E Chambers. College of Veterinary Medicine, Mississippi State University, Mississippi State, MS. (This abstract is #68 in *The Toxicologist*.)

**WEDNESDAY AFTERNOON, FEBRUARY 26  
CONVENTION CENTER—EXHIBIT HALL**

**POSTER SESSION: BIOTRANSFORMATION II**

**Chairperson:** Alan Wilson, Monsanto, St. Louis, MO

**Displayed:** 1:30 p.m.–4:30 p.m.

**Attended:** 1:30 p.m.–3:00 p.m.

- #1263 TEMPERATURE ACCLIMATION DIFFERENTIALLY MODULATES METABOLIC PATHWAYS FOR AFLATOXIN B<sub>1</sub> (AFB<sub>1</sub>) IN RAINBOW TROUT. Q Zhang, C El-Zahr, H M Carpenter, D S Selivonchick, and L R Curtis. Oak Creek Laboratory of Biology and Marine/Freshwater Biomedical Center, Oregon State University, Corvallis, OR.
- #1264 METABOLISM OF [3-<sup>14</sup>C] COUMARIN BY HEPATIC MICROSONES FROM THE RAT, SYRIAN HAMSTER, MONGOLIAN GERBIL AND MAN. D G Walters, \*D J Osborne, R J Price, S D Gangolli, and B G Lake. BIBRA Toxicology International, Carshalton, Surrey, England and \*Lilly Research Centre, Ltd., Windlesham, Surrey, England.
- #1265 NADPH-DEPENDENT FORMATION OF AFLATOXICOL (AFL) FROM AFLATOXIN B<sub>1</sub> (AFB<sub>1</sub>) IN GUINEA PIG KIDNEY MICROSONES. L Liu, K Nakatsu, and T E Massey. Departments of Pharmacology and Toxicology, and Medicine, Queen's University, Kingston, ON, Canada.
- #1266 THE EFFECT OF SPIRONOLACTONE ON THE METABOLISM OF THE PYRROLIZIDINE ALKALOID SENECIONINE IN GUINEA PIG AND RAT. W G Chung and D R Buhler. Toxicology Program, Oregon State University, Corvallis, OR.
- #1267 ACTIVATION OF AFLATOXIN B<sub>1</sub> (AFB<sub>1</sub>) IN ISOLATED RABBIT LUNG CELL MICROSONES AND THE EFFECTS OF  $\beta$ -NAPHTHOFLAVONE (BNF) TREATMENT. J M Daniels and T E Massey. Departments of Pharmacology, Toxicology, and Medicine, Queen's University, Kingston, ON, Canada.
- #1268 METABOLISM OF N-(3,5-DICHLOROPHENYL) SUCCINIMIDE (NDPS) BY FRESHLY ISOLATED RAT LIVER CELLS. A K Nyarko, and P J Harvison. Philadelphia College of Pharm. and Science, Philadelphia, PA.
- #1269 FORMATION OF HYDROQUINONE FROM THE O-DEALKYLATION OF P-METHOXYPHENOL BY RAINBOW TROUT MICROSONES. J M Dady<sup>1</sup>, M M Voit<sup>1</sup>, and S B Bradbury<sup>2</sup>. <sup>1</sup>University of Wisconsin, Superior, WI; <sup>2</sup>US EPA Environmental Research Laboratory, Duluth, MN.
- #1270 DEVELOPMENTAL REGULATION OF FLAVIN-CONTAINING MONOOXYGENASE (FMO) IN LUNG OF FETAL AND NEONATAL RABBITS. D E Williams, M-Y Lee, R N Hines and D M Stresser. Toxicology Program, Oregon State University, Corvallis, OR and Dept. of Pharmacology, Wayne State Univ., Detroit, MI.
- #1271 BIOACTIVATION OF THE PNEUMOTOXIN, BUTYLATED HYDROXYTOLUENE (BHT), BY MOUSE BRONCHIOLAR CLARA CELLS. J L Bolton, A M Malkinson, J A Thompson. Molecular Toxicology and Environmental Health Sciences Program, University of Colorado, Boulder, CO.
- #1272 METABOLISM OF NAPHTHALENE IN THE ISOLATED PERFUSED MOUSE LIVER: EFFLUX OF NAPHTHALENE OXIDE. L Tsuruda, M Lane, P Brennan, A Ko, and A Buckpitt. Dept. of Veterinary Pharmacology and Toxicology, University of California, Davis, CA.
- #1273 METABOLISM OF [<sup>14</sup>C]-1,3-DINITROBENZENE BY RAT SMALL INTESTINE. P C Adams and D E Rickert. Curriculum in Toxicology, University of North Carolina, Chapel Hill, NC and Department of Drug Metabolism, Glaxo, Inc., Research Triangle Park NC.
- #1274 INFLUENCE OF PARTICLES ON BENZO(A)PYRENE METABOLISM. D Warshawsky, R Reitman, J Cheu, and M Radike. University of Cincinnati Medical Center, Cincinnati, OH.

2025807129

- #1275 CYTOCHROME P450 (P450)-DEPENDENT METABOLISM OF ARACHIDONIC ACID (AA) IN GUINEA PIG LIVER: EFFECT OF ISOZYME SELECTIVE INHIBITORS. L C Knickle, C D Webb and J R Bend. Dept. of Pharmacology and Toxicology, University of Western Ontario, London, Canada.
- #1276 EFFECT OF CALORIC RESTRICTION ON THE METABOLISM OF 7-BROMO-AND 7-FLUOROBENZ[A]ANTHRACENE BY MALE B6C3F<sub>1</sub> MOUSE LIVER MICROSONES: REDUCTION OF METABOLIC ACTIVATION PATHWAY. Y Xiao, L S von Tungeln, M W Chou, R W Hart and P P Fu. National Center for Toxicological Research, Jefferson, AR. Sponsor: D W Roberts.
- #1277 DETERMINATION OF METABOLIC RATE CONSTANTS USING THE VIAL EQUILIBRATION TECHNIQUE: VEHICLE EFFECTS. C Kim, S Muralidhara, R Manning, R Brown\*, and J V Bruckner. Department of Pharmacology & Toxicology, University of Georgia, Athens, GA and \*Technical Resources, Inc., Rockville, MD.
- #1278 COMPARISON OF RAT LIVER AND TESTICULAR ESTERASES BY RECOMBINANT DNA TECHNIQUES. B Yan, M Brady and A Parkinson. University of Kansas Medical Center, Kansas City, KS.
- #1279 METABOLISM OF CYCLOPHOSPHAMIDE (CP) BY PEROXIDASES. S Kanekal, L Fraiser, J Davis and J P Kehrer. Division of Pharmacology and Toxicology, College of Pharmacy, University of Texas at Austin, Austin, TX.
- #1280 LIPOXYGENASE—A NOVEL PATHWAY FOR XENOBIOTIC OXIDATION IN HUMAN TERM PLACENTA. P Joseph, N S Srinivasan and A P Kulkarni. Toxicology Program, College of Public Health, University of South Florida, Tampa, FL.
- #1281 PEROXIDASE CATALYZED CHEMICAL OXIDATION IN HUMAN FETUS DURING ORGANOGENESIS PERIOD. N S Srinivasan, P Joseph and A P Kulkarni. Toxicology Program, College of Public Health, University of South Florida, Tampa, FL.
- #1282 HUMAN PLACENTAL PEROXIDASE CATALYZED OXIDATION AND COVALENT BINDING OF 2-AMINOFLUORENE. K Murthy and A P Kulkarni. Florida Toxicology Research Center, College of Public Health, University of South Florida, Tampa, FL.

**WEDNESDAY AFTERNOON, FEBRUARY 26  
CONVENTION CENTER—EXHIBIT HALL**

### **POSTER SESSION: *IN VITRO* DEVELOPMENTAL TOXICOLOGY**

**Chairpersons:** Randolph B. Sleet, Research Triangle Institute, Research Triangle Park, NC and George P. Daston, Procter & Gamble, Cincinnati, OH

**Displayed:** 1:30 p.m.—4:30 p.m.

**Attended:** 3:00 p.m.—4:30 p.m.

- #1283 EMBRYOTOXICITY OF CHLOROQUINE (CQ): ALTERATIONS OF VISERAL YOLK SAC (VYS) FUNCTION *IN VITRO*. J L Ambroso and C Harris. Toxicology Program, Dept. of Environmental and Industrial Health, The University of Michigan, Ann Arbor, MI.
- #1284 GLUTATHIONE (GSH) BIOSYNTHESIS IN THE POSTIMPLANTATION RAT CONCEPTUS *IN VITRO*. C Harris. Toxicology Program, Dept. of Environmental and Industrial Health, University of Michigan, Ann Arbor, MI.
- #1285 GLUTATHIONE CONJUGATION PROTECTS EMBRYOS FROM EFFECTS OF 2-BROMOHYDROQUINONE (BHQ) *IN VITRO*. J E Andrews, J M Rogers, M Ebron-McCoy and S S Lau\*. Developmental Toxicology Division, US EPA, RTP, NC; \*Division of Pharmacology and Toxicology, College of Pharmacy, Univ. of Texas, Austin, TX.
- #1286 CHANGES IN HSP 70 IN OCHRATOXIN A TREATED EMBRYOS *IN VITRO*. E E Smith, C E Braithwaite, M H Small, T D Phillips<sup>1</sup>, and A H Reine. Prairie View A&M University, Prairie View, TX; <sup>1</sup>Texas A&M University, College Station, TX.
- #1287 *IN VITRO* HEAT SHOCK PRODUCES ALTERATIONS IN CYTOSKELETAL PROTEINS IN CULTURED RAT EMBRYOS. B R Fisher<sup>1</sup>, K M Brown<sup>2</sup>, and D L Heredia<sup>3</sup>. <sup>1</sup>Center for Devices and Radiological Health, FDA, Rockville, MD; <sup>2</sup>Department of Biological Sciences, The George Washington University, Washington, DC. Sponsor: P L Goering<sup>1</sup>.
- #1288 INTRAAMNIOTIC MICROINJECTIONS OF 4-OXO-*ALL-TRANS*-RETINOIC ACID, 4-OXO-*13-CIS*-RETINOIC ACID AND *ALL-TRANS*-RETINOIC ACID PLUS URIDINE 5'-DIPHOSPHO-GLUCURONIC ACID IN CULTURED RAT CONCEPTUSES. J Creech Kraft, R Bechter<sup>\*</sup>, Q P Lee, and M R Juchau. Dept. of Pharmacology, University of Washington, Seattle, WA and \*Drug Safety Assessment, Sandoz Pharm. Ltd., Basel, Switzerland.
- #1289 PHARMACOKINETICS OF ETHANOL INDUCED MALFORMATIONS *IN VITRO*. E S Hunter, J A Tugman, K K Sulik\*, and T W Sadler\*. National Toxicology Program, NIEHS, RTP, NC; \*Dept. of Cell Biology and Anatomy, UNC, Chapel Hill, NC. Sponsor: RE Chapin.
- #1290 EVALUATION OF A FISH EMBRYO-LARVAL DEVELOPMENT ASSAY USING SIX COMPOUNDS RECOMMENDED FOR *IN VITRO* TERATOGENESIS TEST VALIDATION. W J Birge and E M Silberhorn. Graduate Center for Toxicology, University of Kentucky, Lexington, KY. Sponsor: L W Robertson.
- #1291 TERATOGENIC EFFECTS OF RETINOIC ACID IN AN *IN VITRO* RAT WHOLE EMBRYO CULTURE SYSTEM. T Thomas, D L Luchtel and E M Faustman. Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #1292 DEVELOPMENTAL TOXICITY OF STYRENE OXIDE IN THE POST-IMPLANTATION EMBRYO CULTURE. C Gregotti, L Manzo, L G Costa, and E M Faustman. Department of Pharmacology, University of Pavia, Pavia, Italy and Department of Environmental Health, University of Washington, Seattle, WA.

2025807130

- #1293 **EFFECTS OF FOUR ALKYLATING AGENTS ON *IN VITRO* RAT EMBRYO DIFFERENTIATION.** *M R Seeley, S M Silbernagel, C Sweeney, and E M Faustman.* Department of Environmental Health, University of Washington, Seattle, WA.
- #1294 **TERATOGENIC EFFECTS OF TOLBUTAMIDE IN MOUSE EMBRYOS *IN VITRO*.** *I W Smoak.* Dept. of Anatomy, Physiological Sciences, and Radiology, North Carolina State University, College of Veterinary Medicine, Raleigh, NC. Sponsor: *C F Brownie.*
- #1295 **AN INVESTIGATION OF THE TERATOGENICITY OF THE PLANT HORMONE, ABSCISIC ACID (ABA) AND AN ANALOG OF ABA USING A CHICK EMBRYO *IN VITRO* TEST.** *A Kerviche<sup>1</sup>, C G Rousseaux<sup>1</sup>, and L V Gusta<sup>2</sup>.* Dept. Veterinary Pathology; Toxicology Programme<sup>1</sup> and Crop Development Centre<sup>2</sup>, University of Saskatchewan, Saskatoon, SK.
- #1296 **EFFECTS OF PATULIN ON POSTIMPLANTATION RAT EMBRYOS.** *M H Small, E E Smith, C E Braithwaite, T D Phillips<sup>1</sup>, and A H Reine.* Prairie View A&M University, Prairie View, TX; <sup>1</sup>Texas A&M University, College Station, TX.
- #1297 **FLUORANTHENE—INDUCED PERTURBATION OF *IN VITRO* MOUSE EMBRYO DEVELOPMENT.** *T R Irvin, P C Mertes, P R Iyer and J E Martin<sup>\*</sup>.* LSU-Inst. of Environmental Studies and Dept. of Veterinary Anatomy\*, Louisiana State Univ., Baton Rouge, LA. Sponsor: *T D Phillips.*
- #1298 **CHROMOSOMAL DAMAGE TO PREIMPLANTATION EMBRYOS *IN VITRO* BY AFLATOXIN B1.** *T R Irvin, L S Gollahon, P R Iyer and J E Martin<sup>\*</sup>.* Inst. for Environmental Studies, LSU and Dept. of Veterinary Anatomy\*, Louisiana State Univ., Baton Rouge, LA. Sponsor: *T Phillips.*
- #1299 **THE EFFECT OF SELENIUM METHIONINE AND SODIUM SELENITE ON MURINE LIMB DEVELOPMENT IN CULTURE.** *M J Politis, J Keiner, and C G Rousseaux.* Department of Veterinary Pathology, WCVM, University of Saskatchewan, Saskatoon, SK.

**WEDNESDAY AFTERNOON, FEBRUARY 26  
CONVENTION CENTER—EXHIBIT HALL**

**POSTER SESSION: ENVIRONMENTAL TOXICOLOGY**

Chairpersons: Jon C. Mirsalis, SRI International, Menlo Park, CA and James A. Hampton, Medical College of Ohio, Toledo, OH

Displayed: 1:30 p.m.—4:30 p.m.

Attended: 1:30 p.m.—3:00 p.m.

- #1300 **LOCALIZATION OF CADMIUM IN THE EARTHWORM, *EISENIA FETIDA*.** *M E Honeycutt, and B L Roberts.* Department of Pharmacology/Toxicology, Northeast Louisiana University, Monroe, LA.
- #1301 **AN IMPROVED METHOD FOR ANALYSIS OF NITROBENZENES IN SOILS.** *J E Preslan, B B Hatrel, L E White, and W J George.* Departments of Pharmacology/Toxicology and Environmental Health Sciences, Tulane University, New Orleans, LA.
- #1302 **TRICHLOROETHYLENE IN SOIL: PLANT UPTAKE, TOXICITY, AND BIODEGRADATION IN THE RHIZOSPHERE.** *B T Walton,* Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN; *T A Anderson,* the University of Tennessee, Knoxville; *D J Deckert,* Westmont College, Santa Barbara, CA; and *M S Jen,* California State University, Los Angeles, CA.
- #1303 **STUDY ON THE ETHOLOGY OF CRUDE OIL INGESTION BY CATTLE.** *R W Coppock, L Z Florence, C G Miller, A A Khan, and D L Fritz.* Animal Sciences Division, Alberta Environmental Centre, Vegreville, AB, Canada.
- #1304 **KINETICS OF ACETONITRILE DEGRADATION BY IMMOBILIZED CELLS OF *PSEUDOMONAS PUTIDA*.** *R Williams, G R V Babu, E Hall and K D Chapatwala.* Selma Univ., Selma AL. Sponsor: *D Desaiyah.*
- #1305 **ENCAPSULATION OF THIOSULFONATES AND CYANIDE-SULFURTRANSFERASE BY MOUSE CARRIER ERYTHROCYTES.** *I Petrikovics, W D McGuinn, E P Cannon, A J Hawkins, L Pei, and J L Way.* Dept. of Medical Pharmacology and Toxicology, Texas A&M University College of Medicine, College Station, TX.
- #1306 **O-DEALKYLATION OF RESORUFIN ETHERS AS AN INDICATION OF CYTOCHROME P450 INDUCTION IN *SIGMODON HISPIDUS* (COTTON RAT): A METHOD FOR MONITORING ENVIRONMENTAL CONTAMINATION.** *C W Qualls Jr<sup>1</sup>, C S Elangbam<sup>1</sup>, R L Lochmiller<sup>2</sup>, J W Lish<sup>1</sup>.* Oklahoma State University, <sup>1</sup>Dept. of Veterinary PAthology and <sup>2</sup>Dept. of Zoology, Stillwater, OK. Sponsor: *S Sangiah.*
- #1307 **NITROGEN DIOXIDE EFFECTS IN NEONATE FERRET LUNG.** *R E Rasmussen, E Escano, and S H Pyo.* Department of Community and Environmental Medicine, University of California, Irvine, CA. Sponsor: *D B Menzel.*
- #1308 **WOOD STOVE VS OIL FURNACE EMISSIONS: RELATIVE IMPACT ON RAT LUNG FUNCTION AND STRUCTURE.** *D W Winsett, J S Tepper, J McGee, and D L Costa<sup>\*</sup>.* ManTech Environmental and <sup>\*</sup>EPA, RTP, NC.
- #1309 **DEGRADATION OF AZO DYES BY ENVIRONMENTAL MICROORGANISMS AND HELMINTHS.** *K T Chung and S E Stevens, Jr.* Department of Biology, Memphis State University, Memphis, TN. Sponsor: *W H Lawrence.*
- #1310 **HEPATIC BIOCHEMICAL EFFECTS IN CATTLE EXPOSED TO METHANOL AND DIETHYLENE GLYCOL.** *A A Khan, R W Coppock and M M Schuler.* Animal Sciences Division, Alberta Environmental Centre, Vegreville, Alberta, Canada.
- #1311 **SOME FACTORS INVOLVED IN THE HYDRIDE GENERATION OF ALKYLARSINES.** *M S Smith<sup>1</sup>, P R Jones<sup>2</sup>, and D Y Shirachi<sup>1</sup>* Dept. of Physiology and Pharmacology, <sup>2</sup>Dept. of Chemistry, Univ. of the Pacific, Stockton, CA. Sponsor: *N El Sayed.*

2025807131

- #1312 **URINARY MUTAGENS IN MUNICIPAL REFUSE INCINERATOR WORKERS AND WATER TREATMENT WORKERS.** X Ma, J G Babis, J M Scarlett. Departments of Veterinary Pharmacology and Epidemiology, NYS College of Veterinary Medicine; W H Gutenmann, D J Lisk. Toxic Chemicals Laboratory, NYS College of Agriculture and Life Sciences, Cornell University, Ithaca, NY.
- #1313 **TOXICOLOGICAL EVALUATION OF A WATER RESOURCE RECOVERY PILOT PLANT.** M A Pereira, M D Khouri, and D K Gulati. EHRT Inc., Cincinnati, OH.
- #1314 **THE EFFECT OF TEMPERATURE ON THE VOLATILIZATION OF ALKYLARSINES DURING POST-HYDRIDE GENERATION AS MONITORED BY MASS SPECTROMETRY.** D Y Shirachi, M S Smith, and PR Jones<sup>1</sup>. Dept. of Physiology and Pharmacology, Chemistry Dept<sup>1</sup>, University of the Pacific, Stockton, CA. Sponsor: S T Omaye.
- #1315 **ENVIRONMENTAL DEGRADATION OF A POLYACRYLAMIDE THICKENING AGENT.** E A Smith and F W Oehme. Comparative Toxicology Laboratories, College of Veterinary Medicine, Kansas State University, Manhattan, KS.
- #1316 **COMPARISON OF THE HEPATIC P450-INDUCING EFFECTS OF AROCLOR 1254 IN RATTUS NORVEGICUS, MUS MUSCULUS STRAIN B6C3F1 AND REITHRODONTOMYS FLUVESCENS.** R A Lubet, L E Beebe, S D Fox, H J Issaw, K McBee and R W Nims. LCC and CSAL, PRI/DynCorp, Inc., NCI-FCRDC, Frederick, MD, and Oklahoma State University, Stillwater, OK.
- #1317 **CHANGE OF PLASMA ESTRADIOL-17 $\beta$  IN LAYING HENS IS A SENSITIVE INDICATOR OF THE REPRODUCTIVE EFFECT OF POLLUTANTS.** S W Chen, P J Dziuk, and B M Francis. Department of Animal Sciences and Institute for Environmental Studies, University of Illinois, Urbana, IL.
- #1318 **DIETARY ALUMINUM OR ACID-INHIBITION OF GROWTH AND INSULIN LIKE GROWTH FACTOR-I.** M C Capdeville, C G Scanes. Joint Graduate Program in Toxicology, Rutgers University, Piscataway, NJ. Sponsor: M A Gallo.
- #1319 **DEVELOPMENTAL PATTERNS OF PORPHYRIN PROFILES IN THE EUROPEAN STARLING (*STURNUS VULGARIS*).** J M Akins, M J Hooper, H A Davis and J S Woods. Environmental Toxicology Dept., Clemson Univ., Pendleton, SC, and Dept. of Environmental Health, Univ. of Washington, Seattle, WA.
- #1320 **USE OF AN AQUATIC MICROCOISM IN ASSESSING THE ENVIRONMENTAL SAFETY OF AN EXPERIMENTAL PESTICIDE.** P C Francis, P J Cocke and R D Meyerhoff. Toxicology Research Laboratories, Eli Lilly and Company, Greenfield, IN. Sponsor: M J Vodcienik.

#### **WEDNESDAY, FEBRUARY 26**

**2:00 p.m.-4:00 p.m.**

**CONVENTION CENTER-ROOM 613**

#### **FORUM FOR NEW INVESTIGATORS**

**Chairperson:** Robert A. Roth, SOT Education Committee

The SOT Education Committee sponsors this forum for new investigators seeking funds for research and training. This year's program will include a brief summary of the NIH individual grants program, but will emphasize programs from other federal agencies. In addition, hints on preparing a proposal will be presented. The panel will include representatives from the U.S. Department of Agriculture, Air Force, Army, and the NIH Toxicology Study Section. Each will make a short presentation about funding opportunities, review mechanisms and/or grantsmanship before initiation of a question and answer session between the audience and panel members.

**Presenters and Panel Members:** Rosemary R. Grady, Acting Deputy Associate Administrator and Program Director, Office of Grants and Program Systems, National Research Initiative Competitive Grants Program, Cooperative State Research Service, U.S. Department of Agriculture; Jean V. Smith, Principal Assistant Responsible for Contracting, U.S. Army Medical Research and Development Command; William Berry, AROSR/NL; William D. Atchison, Member of the NIH Toxicology Study Section, Department of Pharmacology and Toxicology, Institute for Environmental Toxicology, Michigan State University.

#### **WEDNESDAY, FEBRUARY 26**

**5:30 p.m.-7:00 p.m.**

Please check the calendar or the Sheraton Hotel lobby board for room assignments.

#### **CHAPTER MEETINGS (EXCEPT PACIFIC NORTHWEST)**

#### **WEDNESDAY, FEBRUARY 26**

**7:00 p.m.-10:00 p.m.**

**SHERATON HOTEL-GRAND BALLROOM**

#### **ANNUAL BANQUET AND AWARDS PRESENTATION**

Tickets are \$38 per person. Meeting registrants can sponsor and prepay for tables of 10. Registrants who purchase a table are able to choose their seating arrangement prior to the banquet by stopping by the SOT Headquarters office in the Juniper/Madrona Rooms by Noon on Tuesday. Requests will be honored on a first-come, first-served basis. Sorry, no refunds or exchanges.

2025807132

**THURSDAY MORNING, FEBRUARY 27**

**8:30 a.m.-11:30 a.m.**

**CONVENTION CENTER—BALLROOM 6A**

## **SYMPOSIUM: ECOGENETICS: GENETIC SUSCEPTIBILITY TO ENVIRONMENTAL AGENTS**

Sponsored by the Molecular Biology, Carcinogenesis, and Mechanisms Specialty Sections

**Chairpersons:** Elaine M. Faustman, and Lucio Costa, University of Washington, Seattle, WA

Eugenetics, the study of genetic susceptibility to environmental agents has an important role in toxicological evaluation. Critical to our formulation of a cumulative dose-response relationship for the human population is individual susceptibility. Thus, this represents a major parameter in our characterization of such risks and has significant scientific regulatory and policy implications. Dramatic examples of the role that such genetic differences has played in defining toxicity can be seen with glucose-6-phosphate dehydrogenase deficiency and sensitivity to primaquine, acetylation differences and susceptibility to isoniazid; and arene oxide defects and diphenylhydanto in induced developmental toxicity. The purpose of this symposium is to focus our attention as toxicologists in this research direction and to provide an introduction to the genetic, biochemical and toxicologic systems under study in this active, interdisciplinary area of research. This symposium will emphasize the application of molecular biological approaches to identify these polymorphisms. It would serve to stimulate cross-disciplinary interests for toxicologists, epidemiologists and geneticists.

- |       |       |   |
|-------|-------|---|
| #1321 | 8:30  | <b>ECOGENETICS: GENETIC SUSCEPTIBILITY TO ENVIRONMENTAL AGENTS: INTRODUCTION.</b> <i>E M Faustman, L G Costa, A G Motulsky, and G S Omenn.</i> Departments of Environmental Health and Medical Genetics, Schools of Medicine and Public Health and Community Medicine, University of Washington, Seattle, WA. |
| #1322 | 8:40  | <b>N-ACETYLTRANSFERASES IN MAN.</b> <i>U A Meyer.</i> Department of Pharmacology, Biocenter of the University of Basel, Basel, Switzerland.   |
| #1323 | 9:15  | <b>MOLECULAR TOXICOLOGY OF HUMAN MICROSOMAL EPOXIDE HYDROLASE: IMPLICATIONS FOR GENETIC EPIDEMIOLOGY.</b> <i>C J Omiecinski, L D Aicher, K B Robinson, H Checkoway, and C Haslett.</i> University of Washington, Seattle, WA.   |
| #1324 | 9:50  | <b>HUMAN CYP1A1 AND CYP1A2 GENES: DIFFERENCES IN EXPRESSION ASSOCIATED WITH RISK OF TOXICITY AND CANCER.</b> <i>D W Nebert and D D Petersen.</i> Dept. Envir. Hlth., Univ. of Cincinnati Med. Center, Cincinnati, OH.   |
| #1325 | 10:25 | <b>PARAOXONASE POLYMORPHISMS: ROLE IN DEFINING HUMAN SUSCEPTIBILITY TO ORGANOPHOSPHATES.</b> <i>B N LaDu, D Lipsig and S Adkins.</i> University of Michigan Medical School, Ann Arbor, MI.  |
|       | 11:10 | <b>CONCLUSIONS/IMPLICATIONS.</b> Chaired by Dr. Gilbert S. Omenn, School of Public Health and Community Medicine, University of Washington, Seattle, WA.  |

**THURSDAY MORNING, FEBRUARY 27**

**8:30 a.m.-11:30 a.m.**

**CONVENTION CENTER—BALLROOM 6C**

## **SYMPOSIUM: IMPROVEMENTS IN QUANTITATIVE NONCANCER RISK ASSESSMENT**

**Chairpersons:** Barbara D. Beck, Gradient Corporation, Cambridge, MA and Michael L. Dourson, USEPA, Cincinnati, OH

The present approach towards quantitative risk assessment of noncancer effects, as reflected in the Acceptable Daily Intake (ADI) or Reference Dose (RfD), often makes inadequate use of information on toxic mechanisms, on intra- or inter-species variability, and dose-response relationships. As a result, the quality of individual risk assessments varies among chemicals. The level of protectiveness is likely to be highly variable among different ADIs/RfDs and it is also difficult to quantify the significance of excess exposures. The purpose of this symposium is to describe efforts to improve the traditional process of noncancer risk assessment—basically the application of 10-fold Uncertainty Factors to a No Observed Adverse Effect Level. The first two presentations describe improvements to the standard approach for developing the ADI/RfD. The appropriateness of the typically used 10-fold Uncertainty Factor, in terms of pharmacokinetic differences, interspecies variability, intraspecies variability, and other factors will be reviewed. Next, the use of the benchmark dose as an alternative to the NOAEL to allow for the use of multiple data sets and to allow comparability among ADIs/RfDs will be discussed. The next two presentations will provide alternative approaches to the basic ADI/RfD approach. A ranking scheme that addresses severity of effect along with variability in both exposure level and exposure duration will be presented. Finally, a biologically based model for chloroform hepatotoxicity that incorporates information on pharmacokinetics and cytotoxicity in the mouse to derive risk estimates for humans will be described. It is expected that this symposium will be of interest to both regulatory toxicologists—who must develop protective levels—and experimental toxicologists—who need to design studies that are of use for quantitative risk assessment.

- |       |      |   |
|-------|------|---|
| #1326 | 8:30 | <b>IMPROVEMENTS IN QUANTITATIVE NONCANCER RISK ASSESSMENT: INTRODUCTION.</b> <i>B D Beck and M L Dourson<sup>2</sup>.</i> Gradient Corp., Cambridge, MA and US EPA, Cincinnati, OH.   |
| #1327 | 8:35 | <b>REDUCING UNCERTAINTY WITH ADJUSTMENT FACTORS.</b> <i>D Hattis<sup>1</sup> and S Lewis<sup>2</sup>.</i> Clark University, Worcester, MA <sup>1</sup> and Exxon Biomedical Sciences, East Millstone, NJ <sup>2</sup> .   |
| #1328 | 9:15 | <b>EXPOSURE-RESPONSE ANALYSIS: MODELING SEVERITY AS THE DEPENDENT VARIABLE AGAINST CONCENTRATION AND DURATION.</b> <i>D J Guth, R C Hertzberg and A M Jarabek.</i> Environmental Criteria and Assessment Office, US EPA, Cincinnati, OH.  |
| #1329 | 9:55 | <b>ALTERNATIVES TO THE NOAEL/UF APPROACH FOR QUANTITATIVE NONCANCER RISK ASSESSMENT.</b> <i>C A Kimmel<sup>1</sup> and H Zenick<sup>2</sup>.</i> US EPA, Office of Health and Environmental Assessment, Washington, DC <sup>1</sup> and Health Effects Research Laboratory, Research Triangle Park, NC <sup>2</sup> . |

2025807133

#1330 10:35 BIOLOGICALLY-BASED HUMAN RISK ASSESSMENT FOR CHLOROFORM HEPATOTOXICITY. *R B Connolly*. CHT, Research Triangle Park, NC.

THURSDAY MORNING, FEBRUARY 27  
8:30 a.m.-11:00 a.m.  
CONVENTION CENTER—ROOM 607

## PLATFORM SESSION: IMMUNOTOXICOLOGY II

Chairpersons: Norbert Kaminski, Medical College of Virginia, Richmond, VA and Marc Pallardy, Universite de Paris, Chatenay, Malabry, France

- #1331 8:30 **B2-ADRENOCEPTOR STIMULATION INCREASES THE NUMBER OF ANTIGEN-SPECIFIC PRECURSOR B LYMPHOCYTES THAT DIFFERENTIATE INTO IgM-SECRETING CELLS WITHOUT AFFECTING BURST SIZE.** *V M Sanders* and *F E Powell-Oliver*. National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #1332 8:45 **SCID MICE RECONSTITUTED WITH MURINE ANTIGEN-SPECIFIC T AND B LYMPHOCYTES: A POTENTIAL MODEL FOR THE STUDY OF INDIRECT MECHANISMS OF IMMUNE TOXICITY.** *F E Powell-Oliver, P L Pollock, A V Wagner, and V M Sanders*. National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- #1333 9:00 **EVALUATION OF THE IMMUNOGENICITY OF PEG-SOD IN BEAGLE DOGS AS DETERMINED BY ELISA.** *T K LaBrie, J B Cornacoff, Y Greener, and J Devin*. Sterling Research Group, Rensselaer, NY.
- #1334 9:15 **METHOXYACETALDEHYDE, AN INTERMEDIATE METABOLITE OF 2-METHOXYETHANOL, IS IMMUNOSUPPRESSIVE IN THE RAT.** *R J Smialowicz, M M Riddle, W C Williams, D L Andrews\*, R W Luebke, and C B Copeland*. U.S. EPA and \*ManTech Inc., ResearchTriangle Park, NC.
- #1335 9:30 **INDUCTION OF APOPTOSIS-LIKE CELL DEATH BY 7,12-DIMETHYLBENZ(A)ANTRACENE (DMBA) IN THE A20.1 MURINE B LYMPHOMA CELL LINE.** *S W Burchiel, D P Davis, S D Ray, S L Barton, and G B Corcoran*. The Univ. of New Mexico College of Pharmacy, Toxicology Program, Albuquerque, NM.
- #1336 9:45 **PROSPECTIVE IDENTIFICATION OF CHEMICAL RESPIRATORY ALLERGENS AS A FUNCTION OF SERUM IgE CONCENTRATION IN MICE.** *R J Dearman, D A Baskettler\** and *I Kimber*. ICI CTL, Macclesfield, UK. \*ESL, Unilever Research and Engineering, Bedford, UK. Sponsor: *P M D Foster*
- #1337 10:00 **IMMUNOTOXIC EFFECTS OF THE COLOR ADDITIVE AMMONIA CARAMEL COLOR.** *G F Houben, H van Loveren, W Seinen, and A H Penninks*. Research Inst. of Toxicology, Univ. of Utrecht; TNO-Toxicology and Nutrition Inst., Zeist; Natl. Inst. of Public Health and Environmental Protection, Bilthoven, The Netherlands. Sponsor: *P J van Bladeren*.
- #1338 10:15 **EPIDERMAL LANGERHANS CELL MATURATION FOLLOWING CHEMICAL ALLERGEN INDUCED STIMULATION OF MIGRATION.** *M Cumberbatch, S W Peters* and *I Kimber*. ICI Central Toxicology Laboratory, Alderley Park, Macclesfield, UK. Sponsor: *P M D Foster*.
- #1339 10:30 **STIMULATION OF LANGERHANS CELL MIGRATION BY EPIDERMAL CYTOKINES.** *I Kimber and M Cumberbatch*. ICI Central Toxicology Laboratory, Alderley Park, Macclesfield, UK. Sponsor: *P M D Foster*.
- #1340 10:45 **MINIMAL CROSS-REACTIVITY OF ANTIBODIES TO TOLUENE DIISOCYANATE (TDI) WITH HEXAMETHYLENE DIISOCYANATE (HDI).** *R Jin and M H Karol*. Graduate School of Public Health, University of Pittsburgh, PA.

THURSDAY MORNING, FEBRUARY 27  
8:30 a.m.-11:15 a.m.  
CONVENTION CENTER—ROOM 608

## PLATFORM SESSION: GLUTATHIONE CONJUGATES AND BIOACTIVATION

Chairperson: George B. Corcoran, University of New Mexico, Albuquerque, NM and Jacqueline H. Smith, Exxon Biomedical Sciences, East Millstone, NJ

- #1341 8:30 **HEPATIC CLEARANCE OF A GLUTATHIONE CONJUGATE BY BOTH  $\gamma$ -GLUTAMYLTRANSFERASE DEPENDENT AND INDEPENDENT MECHANISMS.** *C A Hinchman, A T Truong, and N Ballatori*. Dept. of Biophysics, University of Rochester School of Medicine, Rochester, NY.
- #1342 8:45 **THE ROLE OF RENAL N-ACETYLTRANSFERASE IN THE METABOLISM OF HALOALKENES.** *G Birner, M Werner* and *W Dekant*. Institute of Toxicology, University of Wurzburg, FRG.
- #1343 9:00 **BRAIN UPTAKE AND METABOLISM OF S-(1,2-DICHLOROVINYL) GLUTATHIONE (DCVG) AND S-(1,2-DICHLOROVINYLYL)-L-CYSTEINE (DCVC).** *N Patel, J Fullone, and M W Anders*. Department of Pharmacology, University of Rochester, Rochester, NY.
- #1344 9:15 **NEPHROTOXICITY OF THE GLUTATHIONE AND CYSTEINE CONJUGATES OF 2-BROMO-2-CHLORO-1,1-DIFLUOROTHYLENE, A METABOLITE OF HALOTHANE.** *M F Finkelstein<sup>1</sup>, R B Baggs<sup>2</sup>, and M W Anders<sup>1,3</sup>*. <sup>1</sup>Toxicology Training Program, <sup>2</sup>Departments of Laboratory Animal Medicine and <sup>3</sup>Pharmacology University of Rochester, Rochester, NY.
- #1345 9:30 **BIOACTIVATION MECHANISM OF S-(3-OXOPROPYL)-N-ACETYL-L-CYSTEINE (OPNAC) AND S-(3-OXOPROPYL)-N-ACETYL-L-CYSTEINE S-OXIDE (OPNACS).** *M Hasmi<sup>1</sup>, S Vamvakas<sup>2</sup>, and M W Anders<sup>1</sup>*. <sup>1</sup>Department of Pharmacology, University of Rochester, Rochester, NY, and <sup>2</sup>Institut fur Toxikologie, Universitat Wurzburg, FRG.

2025807134

- #1346 9:45 THE REACTION OF 3-NITROSONITROBENZENE WITH GLUTATHIONE. M K Ellis, K Handley\*, C Bleasdale\*, B T Golding\*, and P D M Foster. ICI Plc, Central Toxicology Laboratory, Alderley Park, Cheshire, UK; \*Dept. of Chemistry, University of Newcastle upon Tyne, UK.
- #1347 10:00 REGULATION OF CYSTEINE CONJUGATE B-LYASE IN RAT KIDNEY FOLLOWING EXPOSURE TO THE N-ACETYL CYSTEINE CONJUGATE OF HEXACHLORO-1,3-BUTADIENE. M MacFarlane, M A Schofield, L Roelandt, M David, P S Goldfarb, L J King, E A Lock\* and G G Gibson. Molecular Toxicology Group, School of Biological Sciences, Univ. of Surrey, Guildford, UK; \*Central Toxicology Laboratory, ICI plc, Alderley Park, Macclesfield, Cheshire, UK.
- #1348 10:15 IN VIVO AND IN VITRO FORMATION OF SEVERAL S-CONJUGATES OF HYDROQUINONE. H E Kleiner, B A Hill, T J Monks, and S S Lau. Div. of Pharm. Tox., College of Pharmacy, The Univ. of Texas at Austin, Austin, TX.
- #1349 10:30 METABOLISM AND TOXICITY OF 2-(GLUTATHION-S-YL)HYDROQUINONE AND 2,3,5-(TRIGLUTATHION-S-YL)HYDROQUINONE IN THE IN SITU PERFUSED RAT KIDNEY. B A Hill, T J Monks, and S S Lau. Div. of Pharmacolgy Toxicology, College of Pharmacy, The Univ. of Texas at Austin, Austin, TX.
- #1350 10:45  $\gamma$ -GLUTAMYL TRANSPEPTIDASE AND DIPEPTIDASE MEDIATED METABOLISM AND TOXICITY OF 2-BROMO-(GLUTATHION-S-YL)HYDROQUINONES IN LLC-PK<sub>1</sub> CELLS. J J W M Mertens, S S Lau, and T J Monks. Division of Pharmacology and Toxicology, College of Pharmacy, The Univ. of Texas at Austin, Austin, TX.
- #1351 11:00 METABOLISM AND TOXICITY OF 2-BROMO-3-(GLUTATHION-S-YL)HYDROQUINONE IN THE IN SITU PERFUSED RAT KIDNEY. M I Rivera, L M Hinojosa, T J Monks, and S S Lau. Div. Pharm. Toxicol., College of Pharmacy, Univ. of Texas at Austin, Austin, TX.

THURSDAY MORNING, FEBRUARY 27  
CONVENTION CENTER—ROOM 605

### POSTER DISCUSSION SESSION: ADVANCES IN PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODELS

Chairperson: Melvin E. Andersen, CIIT, Research Triangle Park, NC

Displayed: 8:30 a.m.–11:30 a.m.

Discussion: 9:30 a.m.–11:30 a.m.

- #1352 INTERSPECIES EXTRAPOLATION OF THE DISPOSITION OF ETHYLENE OXIDE WITH A PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODEL. K Krishnan, M L Gargas, T R Fennel, and M E Andersen. CIIT, RTP, NC.
- #1353 PHYSIOLOGICALLY BASED PHARMACOKINETIC (PBPK) MODELING OF 1,1,1-TRICHLOROETHANE (TRI) TISSUE DISPOSITION IN RATS. P Varkonyi, S Srivatsan, J V Bruckner, and J M Gallo\*. Dept. of Pharmacology Toxicology and Dept. of Pharmaceutics\*, University of Georgia, Athens, GA.
- #1354 VALIDATION OF A PHYSIOLOGICALLY BASED PHARMACOKINETIC MODEL OF PERCHLOROETHYLENE IN RATS USING TISSUE CONCENTRATION-TIME DATA. C E Dallas, P Varkonyi, X M Chen, S Muralidhara, and J M Gallo\*. Depts. of Pharmacology Toxicology and \*Pharmaceutics, College of Pharmacy, University of Georgia, Athens, GA.
- #1355 PHYSIOLOGICALLY-BASED PHARMACOKINETIC (PBPK) MODEL FOR TRICHLOROETHYLENE. R D Stenner, M Templin, W F Elmquist, and R J Bull. Washington State University, Pullman, WA and Battelle Northwest, Richland, WA.
- #1356 VARIABILITY OF PARTITION COEFFICIENTS AND ITS EFFECT ON PHYSIOLOGICALLY-BASED PHARMACOKINETIC MODEL BEHAVIOR. C S Seckel, C L Flemming and J M Gearhart. ManTech Environ. Tech., Dayton, OH. Sponsor: D E Dodd.
- #1357 KINETIC CONSTANTS FOR BIOTRANSFORMATION REACTIONS OF VOLATILE ORGANIC CHEMICALS (VOCs): IN VIVO/IN VITRO COMPARISONS. M L Gargas, and M E Andersen. CIIT, RTP, NC.
- #1358 INVESTIGATION OF 1,3-BUTADIENE METABOLISM IN MONKEYS USING PHYSIOLOGICALLY BASED MODELS. L J Shyr, T L Gilbert, A R Dahl, and R F Henderson. Inhalation Toxicology Research Institute, Albuquerque, NM.
- #1359 PHYSIOLOGICALLY BASED PHARMACOKINETIC MODELING OF NAPHTHALENE TOXICITY INCORPORATING CIRCULATION OF REACTIVE METABOLITES. L M Sweeney, M L Shuler and J G Babish. School of Chemical Engineering and the Department of Pharmacology, NYS College of Veterinary Medicine, Cornell University, Ithaca, NY.
- #1360 IN VIVO AND IN VITRO KINETIC ANALYSIS OF FURAN BIOTRANSFORMATION BY F344 RATS. G L Kedderis, J E Murphy, R Batra, S D Held, M A Carfagna, and M L Gargas. CIIT, RTP, NC.
- #1361 PHYSIOLOGICALLY-BASED TOXICOGENETIC MODELING OF SOLUBLE URANIUM IN THE RAT. M W Himmelstein and E J O'Flaherty. Dept. of Environmental Health, University of Cincinnati, Cincinnati, OH.

2025807135

THURSDAY MORNING, FEBRUARY 27  
CONVENTION CENTER—ROOM 609

## POSTER DISCUSSION SESSION: APPROACHES TO NEUROTOXICITY SCREENING

Chairpersons: Hugh A. Tilson and Harold Zenick, USEPA, Research Triangle Park, NC

Displayed: 8:30 a.m.–11:30 a.m.  
Discussion: 9:30 a.m.–11:30 a.m.

- #1362 SCREENING FOR DEVELOPMENTAL NEUROTOXICANTS: POSSIBLE ALTERNATIVES TO EXISTING GUIDELINES. *E S Goldey, M E Stanton, J P O'Callaghan and K M Crofton*. Neurotoxicology Division, US EPA, RTP, NC.
- #1363 VALIDATION OF A DEVELOPMENTAL NEUROTOXICITY SCREEN IN RODENTS. *M J Collier, P A McAnulty and J M Tesh*. Life Science Research Limited, Eye, Suffolk, UK. Sponsor: *D H Pullinger*.
- #1364 PROFILES OF CHEMICAL EFFECTS USING A NEUROBEHAVIORAL SCREENING BATTERY. *V C Moser<sup>1</sup>, B M Sumrell<sup>1</sup>, and R C MacPhail<sup>2</sup>*. <sup>1</sup>ManTech Environmental Technology and <sup>2</sup>US EPA, RTP, NC.
- #1365 A NEUROBEHAVIORAL VALIDATION STUDY IN THE CD RAT. *J C Pettersen, E Chow, and C L Leahy*. Environmental Health Center, Agricultural Div., CIBA-GEIGY Corp., Farmington, CT.
- #1366 NEUROTOXICITY SCREENING METHODS ARE SENSITIVE TO ENVIRONMENTAL DIFFERENCES. *P J Spencer, J L Matteson, K A Johnson, R R Albee*. The Toxicology Research Laboratory, Dow Chemical Co., Midland, MI.
- #1367 POSITIVE CONTROL NEUROTOXICITY STUDIES FOR EPA (TIFRA) GUIDELINES. *P C Beyrouty, K J Robinson and B R Broxup*. Bio-Research Laboratories Ltd., Senneville (Montreal), PQ, Canada.
- #1368 VALIDATION OF A DEVELOPMENTAL NEUROTOXICITY SCREENING BATTERY: EFFECTS OF HYDROXYUREA, METHYLMERCURIC CHLORIDE AND DIPHENYLHYDANTOIN. *K E Sloan, W R Richter, C S Aulett and I W Daly*. Bio/Dynamics, Inc., East Millstone, NJ.
- #1369 COMPARISON OF PERFORMANCE FROM THREE CONTINENTS ON THE WHO-RECOMMENDED NEUROBEHAVIORAL CORE TEST BATTERY (NCTB). *W K Anger, M G Cassitto, Y-X Liang, R Amador, J Hooisma, D W Chrislip, D Mergler, M Keifer, J Hoertnagl, L Fournier*. Oregon Health Science University, Portland, OR.
- #1370 FUNCTIONAL INDICES SIMPLIFY STATISTICAL ANALYSIS OF THE FUNCTIONAL OBSERVATIONAL BATTERY (FOB). *C L Hoe, R E Morrissey, and K A Soper*. Merck, West Point, PA.
- #1371 STRAIN COMPARISONS OF THE EFFECTS OF DIISOPROPYL-FLUOROPHOSPHATE (DFP) IN RATS. *C J Gordon, L Fogelson, J Farmer and R C MacPhail*. Neurotoxicology Division, US EPA, RTP, NC.

THURSDAY MORNING, FEBRUARY 27  
CONVENTION CENTER—EXHIBIT HALL

## POSTER SESSION: COMMUNICATION/EDUCATION

Chairpersons: Michael A. Kamrin, Michigan State University, East Lansing, MI and Arthur L. Craigmill, UC Davis, Davis, CA

Displayed: 8:30 a.m.–11:30 a.m.  
Attended: 8:30 a.m.–10:00 a.m.

- #1372 ASSESSMENT OF ATSDR'S HEALTH EFFECTS LITERATURE INVENTORY AND DISSEMINATION PROGRAM. *R S DeWoskin, L S Stewart, and J K Carpenter*\*. Research Triangle Inst., Research Triangle Park, NC and \*Agency for Toxic Substances and Disease Registry, Atlanta, GA. Sponsor: *R W Tyl*.
- #1373 PROBLEM-BASED LEARNING—A TOOL TO ENHANCE TOXICOLOGY EDUCATION. *J A Pickrell, F W Oehme and V L Clegg*. Comparative Toxicology Laboratories and Office Planning and Eval., Kansas State University, Manhattan, KS.
- #1374 EVALUATION AND ASSESSMENT OF HOTLINE INFORMATION AND TECHNICAL ASSISTANCE. *M L Marsh*. US EPA, Environmental Criteria and Assessment Office, Research Triangle Park, NC. Sponsor: *C R Shoaf*.
- #1375 THE INTEGRATED RISK INFORMATION SYSTEM: ASSESSMENT DEVELOPMENT PROCESS AND OPPORTUNITIES FOR PUBLIC INPUT. *J Patterson<sup>1</sup>, and A Jarabek<sup>2</sup> and M Dourson<sup>1</sup>*. U.S. Environmental Protection Agency, <sup>1</sup>Cincinnati, OH and <sup>2</sup>Research Triangle Park, NC..
- #1376 AN EXPERT DATABASE MANAGEMENT TOOL FOR BIOLOGICAL EFFECTS OF CHEMICALS. *L A Cox<sup>1</sup>, M G Bird<sup>2</sup>, W Lampson, S J Wykoff*. <sup>1</sup>Cox Associates, Denver, CO; and <sup>2</sup>Exxon Biomedical Sciences Inc., E. Millstone, NJ.
- #1377 BENEFITS OF ISO-9000 SERIES REGISTRATION IN NON-CLINICAL STUDIES. *E B Hobbs, C A Hunter and L S Schnoll*. I Corning Corporation, Midland, MI. Sponsor: *W H Siddiqui*.

2025807136